




Lawrence Recht, MD

Professor of Neurology and Neurological Sciences (Adult Neurology) and, by courtesy, of Neurosurgery

 NIH Biosketch available Online

 Curriculum Vitae available Online

CLINICAL OFFICE (PRIMARY)

- **Stanford Cancer Center Neuro-Oncology Clinic**
875 Blake Wilbur Dr Clinic D
MC 6510
Stanford, CA 94305
Tel (650) 498-6000 Fax (650) 724-3556

ACADEMIC CONTACT INFORMATION

- **Administrative Contact**
Diana Katawazi - Administrative Assistant
Email dianakat@stanford.edu
Tel 650 725-8630

Bio

CLINICAL FOCUS

- Cancer > Neuro Oncology
- Neurology

ACADEMIC APPOINTMENTS

- Professor - University Medical Line, Adult Neurology
- Professor - University Medical Line (By courtesy), Neurosurgery
- Member, Bio-X
- Member, Stanford Cancer Institute
- Member, Wu Tsai Neurosciences Institute

PROFESSIONAL EDUCATION

- Residency: University of Minnesota School of Medicine (1979) MN
- Internship: University of Minnesota School of Medicine (1978) MN
- Medical Education: Columbia Presbyterian Pediatric Residency Program (1977) NY
- Fellowship: Memorial Sloan-Kettering Cancer Center (1984) NY
- Board Certification: Neurology, American Board of Psychiatry and Neurology (1983)
- Residency: New York Presbyterian Hospital (1982) NY
- M.D., Columbia College of P&S , Medicine (1977)

LINKS

- Get a Second Opinion: <https://stanfordhealthcare.org/second-opinion/overview.html>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Our laboratory focuses on two interrelated projects: (1) assessment of glioma development within the framework of the multistage model of carcinogenesis through utilization of the rodent model of ENU neurocarcinogenesis; and (2) assessment of stem cell specification and pluripotency using an embryonic stem cell model system in which neural differentiation is induced.

CLINICAL TRIALS

- 18F-FDOPA PET/CT or PET/MRI in Measuring Tumors in Patients With Newly-Diagnosed or Recurrent Gliomas, Not Recruiting
- 18F-FPPRGD2 PET/CT or PET/MRI in Predicting Early Response in Patients With Cancer Receiving Anti-Angiogenesis Therapy, Not Recruiting
- [18F]DASA-23 and PET Scan in Evaluating Pyruvate Kinase M2 Expression in Patients With Intracranial Tumors or Recurrent Glioblastoma and Healthy Volunteers, Not Recruiting
- A Phase 1b/2, Multicenter, Open-label Study of ACP-196 in Subjects With Recurrent Glioblastoma Multiforme (GBM), Not Recruiting
- A Study of MEDI-575 in Subjects With Recurrent Glioblastoma Multiforme, Not Recruiting
- A Study of Onartuzumab (MetMab) in Combination With Bevacizumab Compared to Bevacizumab Alone or Onartuzumab Monotherapy in Participants With Recurrent Glioblastoma, Not Recruiting
- A Study to Evaluate the Safety and Antitumor Activity in Subjects With Advanced Solid Tumors, Not Recruiting
- An Open-Labeled, Extended-Use of XERECEPT (hCRF) for Patients in Studies NTI 0302, 0303, or Other Designated Studies, Not Recruiting
- Anti-Lag-3 (Relatlimab) and Anti-PD-1 Blockade (Nivolumab) Versus Standard of Care (Lomustine) for the Treatment of Patients With Recurrent Glioblastoma, Not Recruiting
- Assessment of Novel Metabolic Imaging Modalities as A Predictor Of Therapeutic Efficacy in Glioblastoma (GBM), Not Recruiting
- Hyperpolarized Carbon C 13 Pyruvate Magnetic Resonance Spectroscopic Imaging in Detecting Lactate and Bicarbonate in Participants With Central Nervous System Tumors, Not Recruiting
- Phase 2 Study MPC-6827 for Recurrent Glioblastoma Multiforme, Not Recruiting
- Phase II NKTR-102 In Bevacizumab-Resistant High Grade Glioma, Not Recruiting
- Phase II Study of Rindopepimut (CDX-110) in Patients With Glioblastoma Multiforme, Not Recruiting
- Phase III Study of Rindopepimut/GM-CSF in Patients With Newly Diagnosed Glioblastoma, Not Recruiting
- Plerixafor After Radiation Therapy and Temozolomide in Treating Patients With Newly Diagnosed High Grade Glioma, Not Recruiting
- Verubulin, Radiation Therapy, and Temozolomide to Treat Patients With Newly Diagnosed Glioblastoma Multiforme, Not Recruiting
- Whole Brain Radiation Therapy With Standard Temozolomide Chemo-Radiotherapy and Plerixafor in Treating Patients With Glioblastoma, Not Recruiting
- XERECEPT® (hCRF) for Patients Requiring Dexamethasone to Treat Edema Associated With Brain Tumors, Not Recruiting
- XERECEPT® (hCRF) for Primary Glioma Patients Requiring Dexamethasone to Treat Peritumoral Brain Edema, Not Specified

Teaching

STANFORD ADVISEES

Postdoctoral Faculty Sponsor

Sepideh Abdi

Postdoctoral Research Mentor

Abraham Moses

Publications

PUBLICATIONS

- **Monitoring of cancer ferroptosis with [(18)F]hGTS13, a system xc- specific radiotracer.** *Theranostics*
Moses, A.
2025
- **Deuterium metabolic imaging for 3D mapping of glucose metabolism in humans with central nervous system lesions at 3T.** *Magn Res Med*
Adamson, P.
2024
- **Deuterium metabolic imaging for 3D mapping of glucose metabolism in humans with central nervous system lesions at 3T.** *Nucl Med Bio*
Kendirli, M.
2023
- **A clinical PET Imaging Tracer ([18F]DASA-23) to monitor pyruvate kinase M2-induced glycolytic reprogramming in glioblastoma** *Clinical Cancer Research*
Beinat, C.
2021
- **High levels of ubiquinol (oxidized CoQ10) delivered using a drug-lipid conjugate nanodispersion (BPM31510) differentially affect redox status and growth in malignant glioma versus non-tumor cells.** *Scientific Reports*
J, S.
2020
- **A proteomic clock for malignant gliomas: The role of the environment in tumorigenesis at the presymptomatic stage** *PLOS One*
Zheng, L.
2019: e0223558
- **Perfusion MRI-based fractional tumor burden differentiates between tumor and treatment effect in recurrent glioblastomas and informs clinical decision-making.** *Am J Neuroradiol*
Iv, M.
2019
- **Macrophage exclusion after radiation therapy (MERT): A first in human Phase I/II trial using a CXCR4 inhibitor in Glioblastoma** *Clinical Cancer Research*
Thomas, R.
2019
- **Reversed metabolic reprogramming as a measure of cancer treatment efficacy in rat C6 glioma model.** *PLOS One*
Datta, K.
2019
- **Phase I study of MED3617, a selective angiotensin-2 inhibitor alone and combined with carboplatin/paclitaxel, paclitaxel, or bevacizumab for advanced solid tumors** *Clinical Cancer Research*
Hyman, D.
2018
- **Rindopimut with temozolomide for patients with newly diagnosed, EGFRviii-expressing glioblastoma (ACT IV): a randomized, double-blind, international phase 3 trial.** *Lancet Oncology*
Weller, M.
2017
- **Phase 1/2 trial of 5-fraction stereotactic radiosurgery with 5-mm margins with concurrent and adjuvant temozolomide in newly diagnosed supratentorial glioblastoma: Health-related quality of life results** *Int J Radiat Oncol Bio Physic*
Pollom, E.
2017
- **Optimizing bevacizumab dosing in glioblastoma: less is more.** *J Neuro-oncology*

- Ajlan, A.
2017
- **Randomized, double-blind, placebo-controlled, multicenter Phase II study of onartuzumab plus bevacizumab versus placebo plus bevacizumab in patients with recurrent glioblastoma: Efficacy, safety, and hepatocyte growth factor and O6-methylguanine-DNA methyltransferase biomarker analyses.** *J Clinical Oncology*
Cloughesy, T.
2016
 - **Hyperpolarized ¹³C-lactate to ¹³C-bicarbonate ratio as a biomarker for monitoring the acute response of anti-vascular endothelial growth factor (anti-VEGF) treatment** *NMR Biomed*
Park, J.
2016
 - **SDF-1 blockade enhances anti-VEGF therapy of glioblastoma and can be monitored by MRI.** *Neoplasia*
Deng, L.
2016
 - **Cerebro spinal fluid protein dynamic drive network: at the crossroads of brain tumorigenesis.** *Methods*
Tan, Z.
2015
 - **Cerebral blood flow changes in glioblastoma patients undergoing bevacizumab treatment are seen in both tumor and normal brain** *NeuroRad J*
Andre, J.
2015
 - **Gamma-glutamyl transferase 7 is a novel regulator of glioblastoma growth** *BMC Cancer*
Bui, T.
2015
 - **Phase II pilot study of single-agent etirinotecan pegol (NKTR-102) in bevacizumab-resistant high grade glioma.** *J Neuro-oncology*
nagpal, s.
2015
 - **Volumetric spiral chemical shift imaging of hyperpolarized [²⁻¹³C]pyruvate in a rat C6 glioma model** *Magnetic Res Imaging*
Park, J.
2015
 - **Glioblastoma multiforme recurrence: An exploratory study of ¹⁸F FRPPRGD2 PET/CT** *Radiology*
Iagaru, A.
2015
 - **A phase II, multicenter trial of rindopepimut (CDX-110) in newly diagnosed glioblastoma: the ACT III study** *NeuroOncology*
Schuster, J.
2014
 - **Inhibition of CXCR7 extends survival following irradiation of brain tumours in mice and rats** *Br J Cancer*
Walters, M.
2014
 - **Visualization of rodent brain tumor angiogenesis and effects of antiangiogenic treatment using 3D Delta R-2-mu MRA** *ANGIOGENESIS*
Lin, C., Siow, T. Y., Lin, M., Hsu, Y., Tung, Y., Jang, T., Recht, L., Chang, C.
2013; 16 (4): 785-793
 - **Visualization of rodent brain tumor angiogenesis and effects of antiangiogenic treatment using 3D Delta R-2-mu MRA** *ANGIOGENESIS*
Lin, C., Siow, T. Y., Lin, M., Hsu, Y., Tung, Y., Jang, T., Recht, L., Chang, C.
2013; 16 (4): 785-793
 - **Central Nervous System Cancers Clinical Practice Guidelines in Oncology** *JOURNAL OF THE NATIONAL COMPREHENSIVE CANCER NETWORK*

- Nabors, L. B., Ammirati, M., Bierman, P. J., Brem, H., Butowski, N., Chamberlain, M. C., DeAngelis, L. M., Fenstermaker, R. A., Friedman, A., Gilbert, M. R., Hesser, D., Holdhoff, M., Junck, et al
2013; 11 (9): 1114-1151
- **Simultaneous perfusion and permeability measurements using combined spin- and gradient-echo MRI.** *Journal of cerebral blood flow and metabolism*
Schmiedeskamp, H., Andre, J. B., Straka, M., Christen, T., Nagpal, S., Recht, L., Thomas, R. P., Zaharchuk, G., Bammer, R.
2013; 33 (5): 732-743
 - **Metabolic response of glioma to dichloroacetate measured in vivo by hyperpolarized C-13 magnetic resonance spectroscopic imaging** *NEURO-ONCOLOGY*
Park, J. M., Recht, L. D., Josan, S., Merchant, M., Jang, T., Yen, Y., Hurd, R. E., Spielman, D. M., Mayer, D.
2013; 15 (4): 433-441
 - **ETIRINOTECAN PEGOL DNA Topoisomerase 1 Inhibitor Oncolytic** *DRUGS OF THE FUTURE*
Nagpal, S., Recht, L. D.
2013; 38 (4): 227-233
 - **Steroid-Sparing Effect of Corticorelin Acetate in Peritumoral Cerebral Edema Is Associated With Improvement in Steroid-Induced Myopathy** *JOURNAL OF CLINICAL ONCOLOGY*
Recht, L., Mechtler, L. L., Wong, E. T., O'Connor, P. C., Rodda, B. E.
2013; 31 (9): 1182-1187
 - **Thrombin-cleaved Fragments of Osteopontin Are Overexpressed in Malignant Glial Tumors and Provide a Molecular Niche with Survival Advantage** *JOURNAL OF BIOLOGICAL CHEMISTRY*
Yamaguchi, Y., Shao, Z., Sharif, S., Du, X., Myles, T., Merchant, M., Harsh, G., Glantz, M., Recht, L., Morser, J., Leung, L. L.
2013; 288 (5): 3097-3111
 - **Advances in the management of glioblastoma: the role of temozolomide and MGMT testing.** *Clinical pharmacology : advances and applications*
Thomas, R. P., Recht, L., Nagpal, S.
2013; 5: 1-9
 - **Blockade of SDF-1 after irradiation inhibits tumor recurrences of autochthonous brain tumors in rats** *Neuro-Oncology*
Liu, S.
2013
 - **Alterations in Cerebrospinal Fluid Proteins in a Presymptomatic Primary Glioma Model** *PLOS ONE*
Whitin, J. C., Jang, T., Merchant, M., Yu, T. T., Lau, K., Recht, B., Cohen, H. J., Recht, L.
2012; 7 (11)
 - **Metabolite kinetics in C6 rat glioma model using magnetic resonance spectroscopic imaging of hyperpolarized [1-13C]pyruvate** *MAGNETIC RESONANCE IN MEDICINE*
Park, J. M., Josan, S., Jang, T., Merchant, M., Yen, Y., Hurd, R. E., Recht, L., Spielman, D. M., Mayer, D.
2012; 68 (6): 1886-1893
 - **Preliminary use of differential scanning calorimetry of cerebrospinal fluid for the diagnosis of glioblastoma multiforme** *JOURNAL OF NEURO-ONCOLOGY*
Chagovetz, A. A., Jensen, R. L., Recht, L., Glantz, M., Chagovetz, A. M.
2011; 105 (3): 499-506
 - **Chemerin158K Protein Is the Dominant Chemerin Isoform in Synovial and Cerebrospinal Fluids but Not in Plasma** *JOURNAL OF BIOLOGICAL CHEMISTRY*
Zhao, L., Yamaguchi, Y., Sharif, S., Du, X., Song, J. J., Lee, D. M., Recht, L. D., Robinson, W. H., Morser, J., Leung, L. L.
2011; 286 (45): 39520-39527
 - **Treatment and Prophylaxis of Hematologic Malignancy in the Central Nervous System** *CURRENT TREATMENT OPTIONS IN NEUROLOGY*
Nagpal, S., Recht, L.
2011; 13 (4): 400-412
 - **5'-AMP-activated protein kinase activity is elevated early during primary brain tumor development in the rat** *INTERNATIONAL JOURNAL OF CANCER*

- Jang, T., Calaoagan, J. M., Kwon, E., Samuelsson, S., Recht, L., Laderoute, K. R.
2011; 128 (9): 2230-2239
- **Central Nervous System Cancers** *JOURNAL OF THE NATIONAL COMPREHENSIVE CANCER NETWORK*
Brem, S. S., Bierman, P. J., Brem, H., Butowski, N., Chamberlain, M. C., Chiocca, E. A., DeAngelis, L. M., Fenstermaker, R. A., Friedman, A., Gilbert, M. R., Hesser, D., Junck, L., Linette, et al
2011; 9 (4): 352-400
 - **Time-lapse imaging of disease progression in deep brain areas using fluorescence microendoscopy** *NATURE MEDICINE*
Barretto, R. P., Ko, T. H., Jung, J. C., Wang, T. J., Capps, G., Waters, A. C., Ziv, Y., Attardo, A., Recht, L., Schnitzer, M. J.
2011; 17 (2): 223-U120
 - **Bevacizumab improves quality of life in patients with recurrent glioblastoma.** *Chemotherapy research and practice*
Nagpal, S., Harsh, G., Recht, L.
2011; 2011: 602812-?
 - **VERUBULIN HYDROCHLORIDE Apoptosis Inducer Vascular Disrupting Agent Oncolytic** *DRUGS OF THE FUTURE*
Thomas, P., Recht, L.
2010; 35 (12): 993-997
 - **Treatment and Prevention of Secondary CNS Lymphoma** *SEMINARS IN NEUROLOGY*
Nagpal, S., Glantz, M. J., Recht, L.
2010; 30 (3): 263-272
 - **Murine Embryonic Stem Cell-Derived Pyramidal Neurons Integrate into the Cerebral Cortex and Appropriately Project Axons to Subcortical Targets** *JOURNAL OF NEUROSCIENCE*
Ideguchi, M., Palmer, T. D., Recht, L. D., Weimann, J. M.
2010; 30 (3): 894-904
 - **Gender Disparity in the Rate of Partner Abandonment in Patients With Serious Medical Illness** *CANCER*
Glantz, M. J., Chamberlain, M. C., Liu, Q., Hsieh, C., Edwards, K. R., Van Horn, A., Recht, L.
2009; 115 (22): 5237-5242
 - **Understanding the Origins of Gliomas and Developing Novel Therapies: Cerebrospinal Fluid and Subventricular Zone Interplay** *SEMINARS IN ONCOLOGY*
Glantz, M., Kesari, S., Recht, L., Fleischhack, G., Van Horn, A.
2009; 36 (4): S17-S24
 - **MOTEXAFIN GADOLINIUM COMBINED WITH PROMPT WHOLE BRAIN RADIOTHERAPY PROLONGS TIME TO NEUROLOGIC PROGRESSION IN NON-SMALL-CELL LUNG CANCER PATIENTS WITH BRAIN METASTASES: RESULTS OF A PHASE III TRIAL** *INTERNATIONAL JOURNAL OF RADIATION ONCOLOGY BIOLOGY PHYSICS*
Mehta, M. P., Shapiro, W. R., Phan, S. C., Gervais, R., Carrie, C., Chabot, P., Patchell, R. A., Glantz, M. J., Recht, L., Langer, C., Sur, R. K., Roa, W. H., Mahe, et al
2009; 73 (4): 1069-1076
 - **EGFRvIII expression and PTEN loss synergistically induce chromosomal instability and glial tumors** *NEURO-ONCOLOGY*
Li, L., Dutra, A., Pak, E., Labrie, J. E., Gerstein, R. M., Pandolfi, P. P., Recht, L. D., Ross, A. H.
2009; 11 (1): 9-21
 - **Embryonic stem cell rescue of tremor and ataxia in myelin-deficient shiverer mice** *JOURNAL OF THE NEUROLOGICAL SCIENCES*
Low, H. P., Greco, B., Tanahashi, Y., Gallant, J., Jones, S. N., Billings-Gagliardi, S., Recht, L. D., Schwartz, W. J.
2009; 276 (1-2): 133-137
 - **A distinct phenotypic change in gliomas at the time of magnetic resonance imaging detection** *JOURNAL OF NEUROSURGERY*
Jang, T., Sathy, B., Hsu, Y., Merchant, M., Recht, B., Chang, C., Recht, L.
2008; 108 (4): 782-790
 - **Optimizing therapy for patients with brain metastases** *SEMINARS IN ONCOLOGY*
Kuo, T., Recht, L.
2006; 33 (3): 299-306

- **Osteopontin expression in intratumoral astrocytes marks tumor progression in gliomas induced by prenatal exposure to N-ethyl-N-nitrosourea** *AMERICAN JOURNAL OF PATHOLOGY*
Jang, T. C., Savarese, T., Low, H. P., Kim, S., Vogel, H., Lapointe, D., Duong, T., Litofsky, N. S., Weimann, J. M., Ross, A. H., Recht, L.
2006; 168 (5): 1676-1685
- **Tumor necrosis factor-alpha-induced protein 3 as a putative regulator of nuclear factor-kappa B-mediated resistance to O-6-alkylating agents in human glioblastomas** *JOURNAL OF CLINICAL ONCOLOGY*
Bredel, M., Bredel, C., Juric, D., Duran, G. E., Yu, R. X., Harsh, G. R., Vogel, H., Recht, L. D., Scheck, A. C., Sikic, B. I.
2006; 24 (2): 274-287
- **Functional network analysis reveals extended gliomagenesis pathway maps and three novel MYC-interacting genes in human gliomas** *CANCER RESEARCH*
Bredel, M., Bredel, C., Juric, D., Harsh, G. R., Vogel, H., Recht, L. D., Sikic, B. I.
2005; 65 (19): 8679-8689
- **High-resolution genome-wide mapping of genetic alterations in human glial brain tumors** *CANCER RESEARCH*
Bredel, M., Bredel, C., Juric, D., Harsh, G. R., Vogel, H., Recht, L. D., Sikic, B. I.
2005; 65 (10): 4088-4096
- **Amplification of whole tumor genomes and gene-by-gene mapping of genomic aberrations from limited sources of fresh-frozen and paraffin-embedded DNA** *JOURNAL OF MOLECULAR DIAGNOSTICS*
Bredel, M., Bredel, C., Juric, D., Kim, Y., Vogel, H., Harsh, G. R., Recht, L. D., Pollack, J. R., Sikic, B. I.
2005; 7 (2): 171-182
- **Isolation of immortalized, INK4a/ARF-deficient cells from the subventricular zone after in utero N-ethyl-N-nitrosourea exposure** *JOURNAL OF NEUROSURGERY*
Savarese, T. M., Jang, T., Low, H. P., Salmonsens, R., Litofsky, N. S., Matijasevic, Z., Ross, A. H., Recht, L. D.
2005; 102 (1): 98-108
- **Prevention and treatment of central nervous system involvement by non-Hodgkin's lymphoma: A review of the literature** *SEMINARS IN NEUROLOGY*
Colocci, N., Glantz, M., Recht, L.
2004; 24 (4): 395-404
- **Treatment of neoplastic meningitis: what is the standard of care?** *Expert review of neurotherapeutics*
Recht, L., Phuphanich, S.
2004; 4 (4): S11-7
- **Aberrant nestin expression during ethylnitrosourea-(ENU)-induced neurocarcinogenesis** *NEUROBIOLOGY OF DISEASE*
Jang, T. C., Litofsky, N. S., Smith, T. W., Ross, A. H., Recht, L. D.
2004; 15 (3): 544-552
- **Differentiation prevents assessment of neural stem cell pluripotency after blastocyst injection** *STEM CELLS*
Greco, B., Low, H. P., Johnson, E. C., Salmonsens, R. A., Gallant, J., Jones, S. N., Ross, A. H., Recht, L. D.
2004; 22 (4): 600-608