Stanford

Kara Davis

Assistant Professor of Pediatrics (Hematology/Oncology) at the Lucile Salter Packard Children's Hospital

Pediatrics - Hematology & Oncology

CLINICAL OFFICES

- **Pediatric Hematology and Oncology**

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ACADEMIC CONTACT INFORMATION

- **Alternate Contact**

  Alyssa Ray - Research Administrator

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Bio

BIO

Kara Davis, D.O. is an Assistant Professor of Pediatrics in the Division of Hematology and Oncology. Dr. Davis obtained her B.A. from Pennsylvania State University and her D.O. from the Philadelphia College of Osteopathic Medicine. Clinically, she completed her training in Pediatrics at Thomas Jefferson University/A.I. DuPont Children's Hospital and her Heme/Onc fellowship at Lucile Packard Children's Hospital at Stanford. During her fellowship training, Kara worked in the laboratory of Garry Nolan, Ph.D. where she utilized single-cell, high-dimensional analysis platforms to study healthy human B cell development and B cell leukemia. Her research focuses on using single-cell analysis to organize tumor heterogeneity in pediatric cancers, especially blood cancers, as means to determine cell populations associated with clinical risks such as relapse. Clinically, Dr. Davis sees patients with leukemia and is involved with the Cancer Cellular Therapies program with experience in treating children with chimeric antigen receptor (CAR) T-cells and other immunotherapies including checkpoint inhibitors.

CLINICAL FOCUS

- Pediatric Hematology-Oncology

ACADEMIC APPOINTMENTS

- Assistant Professor - Med Center Line, Pediatrics - Hematology & Oncology
- Member, Bio-X
- Member, Maternal & Child Health Research Institute (MCHRI)
- Member, Stanford Cancer Institute

ADMINISTRATIVE APPOINTMENTS

- Vice Chair, COG Study ADVL1412, Children's Oncology Group, (2016- present)

PROFESSIONAL EDUCATION

- Fellowship: Stanford University Pediatric Hematology Oncology Fellowship (2010) CA
- Residency: AI Dupont Hospital for Children (2007) DE
- Medical Education: Philadelphia College of Osteopathic Medicine Office of the Registrar (2004) PA

- Board Certification: Pediatric Hematology-Oncology, American Board of Pediatrics (2011)
- Board Certification: Pediatrics, American Board of Pediatrics (2007)

LINKS

- Lab Website: http://med.stanford.edu/kldavislab.html

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

To address the intrinsic heterogeneity of primary cancers, we have taken a single-cell approach to the study of cancer, particularly childhood leukemia. To organize the tremendous data generated from single-cell studies, we also seek to understand the healthy structure of the tissue of origin.

Using single-cell, high-parameter analysis platforms, especially mass cytometry, to examine primary patient samples, we seek to identify how childhood cancers diverge from their healthy tissue of origin and how cancer cells may exploit developmental states for their benefit. Further, what populations or features of tumor cells are associated with clinical outcomes of interest, such as site of disease, relapse, or drug resistance? Using this knowledge, we can further investigate new approaches to treatment for children with cancer and mechanisms of drug resistance, and with a particular interest in how this relates to immunotherapeutic approaches to cancer treatment.

CLINICAL TRIALS

- CD19/CD22 Chimeric Antigen Receptor T Cells and Chemotherapy in Treating Children or Young Adults With Recurrent or Refractory CD19 Positive B Acute Lymphoblastic Leukemia, Recruiting
- Nivolumab With or Without Ipilimumab in Treating Younger Patients With Recurrent or Refractory Solid Tumors or Sarcomas, Recruiting
- Determine Efficacy and Safety of CTL019 in Pediatric Patients With Relapsed and Refractory B-cell ALL, Not Recruiting
- Genome, Proteome and Tissue Microarray in Childhood Acute Leukemia, Not Recruiting
- Open Label, Phase II Study to Evaluate Efficacy and Safety of Oral Nilotinib in Philadelphia Positive (Ph+) Chronic Myelogenous Leukemia (CML) Pediatric Patients., Not Recruiting
- Study of Efficacy and Safety of CTL019 in Pediatric ALL Patients, Not Recruiting

Teaching

STANFORD ADVISEES

Postdoctoral Faculty Sponsor

Pablo Domizi, Hasini Jayatilaka, Jolanda Sarno

Postdoctoral Research Mentor

Pablo Domizi, Jolanda Sarno

Publications

PUBLICATIONS

- **A novel platform for isotype-specific testing of autoantibodies.** *PloS one*
  Carter, K. L., Treurnicht, A., Davis, K. L., Kumar, R. B., Feldman, B. J.
  2019; 14 (2): e0211596
- **False-positive results with select HIV-1 NAT methods following lentivirus-based tisagenlecleucel therapy** *BLOOD*
  Laetsch, T. W., Maude, S. L., Milone, M. C., Davis, K. L., Krueger, J., Cardenas, A., Eldjerou, L. K., Keir, C. H., Wood, P. A., Grupp, S. A.
  2018; 131 (23): 2596–98

- **SRC/ABL inhibition disrupts CRLF2-driven signaling to induce cell death in B-cell acute lymphoblastic leukemia.** *Oncotarget*
  Sarno, J., Savino, A. M., Buracchi, C., Palmi, C., Pinto, S., Bugarin, C., Jager, A., Bresolin, S., Barber, R. C., Silvestri, D., Israeli, S., Dyer, M. J., Cazzaniga, et al
  2018; 9 (33): 22872–85

- **Single-cell developmental classification of B cell precursor acute lymphoblastic leukemia at diagnosis reveals predictors of relapse.** *Nature medicine*
  Good, Z., Sarno, J., Jager, A., Samusik, N., Aghaeepour, N., Simonds, E. F., White, L., Lacayo, N. J., Fantl, W. J., Fazio, G., Gaipa, G., Biondi, A., Tibshirani, et al
  2018; 24 (4): 474–83

- **Publisher Correction: High-resolution myogenic lineage mapping by single-cell mass cytometry.** *Nature cell biology*
  Porpiglia, E., Samusik, N., Van Ho, A. T., Cosgrove, B. D., Mai, T., Davis, K. L., Jager, A., Nolan, G. P., Bendall, S. C., Fantl, W. J., Blau, H. M.
  2018

- **Tisagenlecleucel in Children and Young Adults with B-Cell Lymphoblastic Leukemia** *NEW ENGLAND JOURNAL OF MEDICINE*
  Maude, S. L., Laetsch, T. W., Buechner, J., Rives, S., Boyer, M., Bittencourt, H., Bader, P., Verneris, M. R., Stefanski, H. E., Myers, G. D., Qayed, M., De Moerloose, B., Hiramatsu, et al
  2018; 378 (5): 439–48

- **Niclosamide suppresses acute myeloid leukemia cell proliferation through inhibition of CREB-dependent signaling pathways** *ONCOTARGET*
  Chae, H., Cox, N., Dahl, G. V., Lacayo, N. J., Davis, K. L., Capolicchio, S., Smith, M., Sakamoto, K. M.
  2018; 9 (4): 4301–17

- **DRUG-NEM: Optimizing drug combinations using single-cell perturbation response to account for intratumoral heterogeneity.** *Proceedings of the National Academy of Sciences of the United States of America*
  Anchang, B., Davis, K. L., Fienberg, H. G., Williamson, B. D., Bendall, S. C., Karacosta, L. G., Tibshirani, R., Nolan, G. P., Plevritis, S. K.
  2018; 115 (18): E4294–E4303

- **Single-cell mass cytometry and machine learning predict relapse in childhood leukemia.** *Molecular & cellular oncology*
  Sarno, J., Davis, K. L.
  2018; 5 (5): e1472057

- **Cost-Effectiveness of Chimeric Antigen Receptor T-Cell Therapy in Relapsed or Refractory Pediatric B-Cell Acute Lymphoblastic Leukemia** *Journal of Clinical Oncology*
  Lin, J., Lerman, B. J., Barnes, J., Boursiquot, B., Tan, Y., Robinson, A., Davis, K., Owens, D., Goldhaber-Fiebert, J.
  2018

- **Identity and Diversity of Human Peripheral Th and T Regulatory Cells Defined by Single-Cell Mass Cytometry** *JOURNAL OF IMMUNOLOGY*
  Kunicki, M. A., Hernandez, L., Davis, K. L., Bacchetta, R., Roncarolo, M.
  2018; 200 (1): 336–46

- **High-resolution myogenic lineage mapping by single-cell mass cytometry** *NATURE CELL BIOLOGY*
  Porpiglia, E., Samusik, N., Van Ho, A. T., Cosgrove, B. D., Mai, T., Davis, K. L., Jager, A., Nolan, G. P., Bendall, S. C., Fantl, W. J., Blau, H. M.
  2017; 19 (5): 558-?

- **New developments in immunotherapy for pediatric solid tumors.** *Current opinion in pediatrics*
  Schultz, L. M., Majzner, R., Davis, K. L., Mackall, C.
  2017

- **Checkpoint inhibition in pediatric hematologic malignancies** *PEDIATRIC HEMATOLOGY AND ONCOLOGY*
  Davis, K. L., Agarwal, A. M., Verma, A. R.
  2017; 34 (6-7): 379–94

- **Data-Driven Phenotypic Dissection of AML Reveals Progenitor-like Cells that Correlate with Prognosis** *CELL*
  Levine, J. H., Simonds, E. F., Bendall, S. C., Davis, K. L., Amir, E. D., Tadmor, M. D., Litvin, O., Fienberg, H. G., Jager, A., Zunder, E. R., Finck, R., Gedman, A. L., Radtke, et al
  2015; 162 (1): 184-197

- **Single-Cell Trajectory Detection Uncovers Progression and Regulatory Coordination in Human B Cell Development** *CELL*
  Bendall, S. C., Davis, K. L., Amir, E. D., Tadmor, M. D., Simonds, E. F., Chen, T. J., Shenfeld, D. K., Nolan, G. P., Pe'er, D.
  2014; 157 (3): 714-725

- **viSNE enables visualization of high dimensional single-cell data and reveals phenotypic heterogeneity of leukemia.** *Nature biotechnology*
  Amir, E. D., Davis, K. L., Tadmor, M. D., Simonds, E. F., Levine, J. H., Bendall, S. C., Shenfeld, D. K., Krishnaswamy, S., Nolan, G. P., Pe'er, D.
  2013; 31 (6): 545-552
- **Pediatric Acute Myeloid Leukemia as Classified Using 2008 WHO Criteria: A Single-Center Experience.** *American journal of clinical pathology*
  Davis, K. L., Marina, N., Arber, D. A., Ma, L., Cherry, A., Dahl, G. V., Heerema-McKenney, A.
  2013; 139 (6): 818-825
- **Ikaros: master of hematopoiesis, agent of leukemia.** *Therapeutic advances in hematology*
  Davis, K. L.
  2011; 2 (6): 359-368
- **Speeding the Flow Toward Personalized Therapy in Childhood Acute Leukemia** *PEDIATRIC BLOOD & CANCER*
  Simonds, E. F., Davis, K. L., Lacayo, N. J.
  2009; 53 (4): 525-526
- **Why Are Young Infants Tested for Herpes Simplex Virus?** *PEDIATRIC EMERGENCY CARE*
  Davis, K. L., Shah, S. S., Frank, G., Eppes, S. C.
  2008; 24 (10): 673-678