

## Translational Breast Cancer Research

A postdoctoral training position is available in the [laboratory of Carlos L. Arteaga, M.D.](#) in the Simmons Comprehensive Cancer Center at UT Southwestern Medical Center. The laboratory has a longstanding interest in understanding the molecular pathways that drive breast cancer progression and influence response to therapies. Our laboratory has a strong translational focus, aimed at developing therapeutic strategies and identifying biomarkers of drug sensitivity and resistance.

Current projects include:

- Discovery of mechanisms of resistance to breast cancer therapies (i.e., estrogen receptor antagonists, CDK4/6 inhibitors, HER2 inhibitors, PI3K/AKT inhibitors)
- Genomic profiling of drug-resistant breast cancers
- Identifying rational combinations to overcome resistance to targeted therapies

We incorporate molecular profiling (next-gen DNA/RNA sequencing) of patient tumors, CRISPR, forward genetics, and gain-of-function ORF screens, and mechanistic studies using breast cancer cell lines, cell line-derived xenografts, and patient-derived organoids and xenografts, with the goal of using insights from the laboratory to guide clinical trials.

Relevant recent publications that apply to these topics include:

- [Proline rich 11 \(PRR11\) overexpression amplifies PI3K signaling and promotes antiestrogen resistance in breast cancer.](#) *Nat Commun.* 2020 Oct 30;11(1):5488.
- [Hyperactivation of TORC1 Drives Resistance to the Pan-HER Tyrosine Kinase Inhibitor Neratinib in HER2-Mutant Cancers.](#) *Cancer Cell.* 2020 Feb 10;37(2):183-199.e5.
- [Aberrant FGFR signaling mediates resistance to CDK4/6 inhibitors in ER+ breast cancer.](#) *Nat Commun.* 2019 Mar 26;10(1):1373.
- [ER+ Breast Cancers Resistant to Prolonged Neoadjuvant Letrozole Exhibit an E2F4 Transcriptional Program Sensitive to CDK4/6 Inhibitors.](#) *Clin Cancer Res.* 2018 Jun 1;24(11):2517-2529.
- [Genomic profiling of ER+ breast cancers after short-term estrogen suppression reveals alterations associated with endocrine resistance.](#) *Sci Transl Med.* 2017 Aug 9;9(402):eaai7993.
- [An Acquired HER2\(T798I\) Gatekeeper Mutation Induces Resistance to Neratinib in a Patient with HER2 Mutant-Driven Breast Cancer.](#) *Cancer Discov.* 2017 Jun;7(6):575-585.

Applicants with a recent Ph.D., M.D., or M.D./Ph.D. and a strong background in molecular & cell biology and genomics with an interest in translational research are encouraged to apply. A track record of productivity and publications in well-established journals is essential.

Information on our postdoctoral training program and benefits can be found in our [Postdoc Handbook](#) or at <http://www.utsouthwestern.edu/postdocs>.

Interested individuals should send a CV, statement of interests, and a list of three references to:

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