Introduction to Clinical and Translational Research, Session 1

This course introduces the mission and processes of Clinical and Translational Research (CTR). It demonstrates approaches to formulating and writing research questions and hypotheses appropriate to CTR. Online video lectures prepare participants for the course sessions.

**About this Resource**

CTR is the branch of health research that seeks to bridge the gap between bench researchers who conduct basic science and clinicians seeking to treat people and populations. To speed the pace of CTR, the NIH has galvanized the field through establishment of the Clinical Translational Science Award.

In Part 1 of the video lectures that accompany "Introduction to Clinical and Translational Research, Session 1," an ECDE lecturer summarizes the history and rise of CTR in recent years, and introduce its key concepts. He reviews the obstacles that make translational research difficult, and the basic processes and architecture of CTR studies. Emphasis is given to CTR's various goals, including the improved use of bioinformatics and high dimensional data in research, and the development of Precision Medicine, (sometimes known as personalized medicine.)

Part 2 of the video lectures focuses on the importance of forming research questions and hypotheses appropriate to CTR inquiry. The lecturer outlines the types of health phenomena CTR is most concerned with, including disease/health mechanisms and mediators, diagnoses, and interventions. She reviews the nature of CTR research questions, and provides tools to help new investigators construct compelling hypotheses that will contribute to success in research, grant applications and article submissions.

**Course Syllabus**

What is Clinical and Translational Research?

Understanding the Stages of CTR

The Role of CTR in Precision Medicine

Using High Dimension Data (Bioinformatics)

Multidisciplinary and Team Research in CTR

Outcomes and Comparative Effectiveness Research

Formulating Clinical Translational Research Questions and Hypotheses

Common Reasons Why Papers are Rejected for Publication

Where Do You Find the Hypotheses in Published Article?

**Recommended background**

Please complete the following prior to attending the annual short course, "Introduction to Clinical and Translational Research, Session 1:”

Pre-test on Clinical Translational Research

View the two-part video resource

Participant Break-out Session Guide

Read the four articles listed below

**Suggested Readings**

[Liu R](http://www.ncbi.nlm.nih.gov/pubmed?term=liu%2520r%255bauthor%255d&cauthor=true&cauthor_uid=17229949)1, [Wang X](http://www.ncbi.nlm.nih.gov/pubmed?term=Wang%2520X%255BAuthor%255D&cauthor=true&cauthor_uid=17229949), [Chen GY](http://www.ncbi.nlm.nih.gov/pubmed?term=Chen%2520GY%255BAuthor%255D&cauthor=true&cauthor_uid=17229949), [Dalerba P](http://www.ncbi.nlm.nih.gov/pubmed?term=dalerba%2520p%255bauthor%255d&cauthor=true&cauthor_uid=17229949), [Gurney A](http://www.ncbi.nlm.nih.gov/pubmed?term=Gurney%2520A%255BAuthor%255D&cauthor=true&cauthor_uid=17229949), [Hoey T](http://www.ncbi.nlm.nih.gov/pubmed?term=hoey%2520t%255bauthor%255d&cauthor=true&cauthor_uid=17229949), [Sherlock G](http://www.ncbi.nlm.nih.gov/pubmed?term=Sherlock%2520G%255BAuthor%255D&cauthor=true&cauthor_uid=17229949), [Lewicki J](http://www.ncbi.nlm.nih.gov/pubmed?term=lewicki%2520j%255bauthor%255d&cauthor=true&cauthor_uid=17229949), [Shedden K](http://www.ncbi.nlm.nih.gov/pubmed?term=shedden%2520k%255bauthor%255d&cauthor=true&cauthor_uid=17229949), [Clarke MF](http://www.ncbi.nlm.nih.gov/pubmed?term=Clarke%2520MF%255BAuthor%255D&cauthor=true&cauthor_uid=17229949). [The prognostic role of a gene signature from tumorigenic breast-cancer cells.](http://www.ncbi.nlm.nih.gov/pubmed/?term=The+prognostic+role+of+a+gene+signature+from+tumorigenic+breast-cancer+cells) [N Engl J Med.](http://www.ncbi.nlm.nih.gov/pubmed/17229949) 2007 Jan 18;356(3):217-26.

[Slamon DJ](http://www.ncbi.nlm.nih.gov/pubmed?term=Slamon%2520DJ%255BAuthor%255D&cauthor=true&cauthor_uid=11248153)1, [Leyland-Jones B](http://www.ncbi.nlm.nih.gov/pubmed?term=Leyland-Jones%2520B%255BAuthor%255D&cauthor=true&cauthor_uid=11248153), [Shak S](http://www.ncbi.nlm.nih.gov/pubmed?term=shak%2520s%255bauthor%255d&cauthor=true&cauthor_uid=11248153), [Fuchs H](http://www.ncbi.nlm.nih.gov/pubmed?term=Fuchs%2520H%255BAuthor%255D&cauthor=true&cauthor_uid=11248153), [Paton V](http://www.ncbi.nlm.nih.gov/pubmed?term=Paton%2520V%255BAuthor%255D&cauthor=true&cauthor_uid=11248153), [Bajamonde A](http://www.ncbi.nlm.nih.gov/pubmed?term=bajamonde%2520a%255bauthor%255d&cauthor=true&cauthor_uid=11248153), [Fleming T](http://www.ncbi.nlm.nih.gov/pubmed?term=Fleming%2520T%255BAuthor%255D&cauthor=true&cauthor_uid=11248153), [Eiermann W](http://www.ncbi.nlm.nih.gov/pubmed?term=eiermann%2520w%255bauthor%255d&cauthor=true&cauthor_uid=11248153), [Wolter J](http://www.ncbi.nlm.nih.gov/pubmed?term=wolter%2520j%255bauthor%255d&cauthor=true&cauthor_uid=11248153), [Pegram M](http://www.ncbi.nlm.nih.gov/pubmed?term=pegram%2520m%255bauthor%255d&cauthor=true&cauthor_uid=11248153), [Baselga J](http://www.ncbi.nlm.nih.gov/pubmed?term=baselga%2520j%255bauthor%255d&cauthor=true&cauthor_uid=11248153), [Norton L](http://www.ncbi.nlm.nih.gov/pubmed?term=Norton%2520L%255BAuthor%255D&cauthor=true&cauthor_uid=11248153). [Use of chemotherapy plus a monoclonal antibody against HER2 for metastatic breast cancer that overexpresses HER2](http://www.ncbi.nlm.nih.gov/pubmed/?term=Use+of+chemotherapy+plus+a+monoclonal+antibody+against+HER2+for+metastatic+breast+cancer+that+overexpresses+HER2). [N Engl J Med.](http://www.ncbi.nlm.nih.gov/pubmed/?term=Slamon+D+Use+of+Chemotherapy+plus+a+monoclonal+antibody) 2001 Mar 15;344(11):783-92.

Pritchard KI, Shepherd LE, O'Malley FP, Andrulis IL, Tu D, Bramwell VH, Levine MN; National Cancer Institute of Canada Clinical Trials Group. [HER2 and responsiveness of breast cancer to adjuvant chemotherapy](http://www.ncbi.nlm.nih.gov/pubmed/16707747). N Engl J Med. 2006 May 18;354(20):2103-11.

[Stark A](http://www.ncbi.nlm.nih.gov/pubmed?term=Stark%2520A%255BAuthor%255D&cauthor=true&cauthor_uid=15557362)1, [Kucera G](http://www.ncbi.nlm.nih.gov/pubmed?term=kucera%2520g%255bauthor%255d&cauthor=true&cauthor_uid=15557362), [Lu M](http://www.ncbi.nlm.nih.gov/pubmed?term=Lu%2520M%255BAuthor%255D&cauthor=true&cauthor_uid=15557362), [Claud S](http://www.ncbi.nlm.nih.gov/pubmed?term=claud%2520s%255bauthor%255d&cauthor=true&cauthor_uid=15557362), [Griggs J](http://www.ncbi.nlm.nih.gov/pubmed?term=Griggs%2520J%255BAuthor%255D&cauthor=true&cauthor_uid=15557362). [Influence of health insurance status on inclusion of HER-2/neu testing in the diagnostic workup of breast cancer patients](http://www.ncbi.nlm.nih.gov/pubmed/?term=Influence+of+health+insurance+status+on+inclusion+of+HER-2%2Fneu+testing+in+the+diagnostic+workup+of+breast+cancer+patients). [Int J Qual Health Care.](http://www.ncbi.nlm.nih.gov/pubmed/?term=stark+A+influence+of+a+health+insurance+status) 2004 Dec;16(6):517-21.

**FAQ**

**Will I receive a Certificate of Completion after completing this course?** Yes. Participants who complete the course receive a Certificate. They must watch the videos and attend the in-person session.

**Do I need to be a K Scholar to take this course?** No. In addition to K Scholars, this course is open to faculty, clinicians, community health workers, fellows, post-docs, TL1 and F trainees, as well as medical, OT/PT, pharmacy and other students who intend to conduct clinical and translational research.