

**Session 2  
Break out**

**How to Critique a Scientific Study**

**Dave Fitzgerald, Rob Baker, and Bob Groom**

Knowledge gained from the published literature is part of the foundation necessary in our effort to improve patient care. There is increasing concern that many of the assertions made in the published scientific literature are flawed due to investigator bias and poor study design.<sup>1</sup> Poor studies could be misleading. Therefore, the ability to assess the validity of an author's assertion is an important skill for a perfusionists.

A method of evaluation an assertion will be presented.<sup>2</sup> Following the presentation of a framework for the evaluation an assertion, participants will have the opportunity to engage in an interactive critical review of a scientific paper. This exercise will provide the participant with experience using a framework for evaluating a scientific study.

All Participants of this interactive Breakout session should read, Liberal or Restrictive Transfusion after Cardiac Surgery by Gavin J. Murphy and Colleagues.<sup>3</sup> A copy of this article will be provide to all participants that register for the conference.

Useful corollaries that will enhance the participant's skill for detecting weaknesses in scientific studies will also be reviewed.

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<sup>1</sup> Ioannidis JP PLoS Medicine 2005 August 2:8 e124 DOI: 10.1371/journal.pmed.0020124

<sup>2</sup> [http://www.dartmouth.edu/~cecs/evaluating\\_an\\_assertion.html](http://www.dartmouth.edu/~cecs/evaluating_an_assertion.html)

<sup>3</sup> Gavin J. Murphy, F.R.C.S., Katie Pike, M.Sc., Chris A. Rogers, Ph.D., Sarah Wordsworth, Ph.D., Elizabeth A. Stokes, M.Sc., Gianni D. Angelini, F.R.C.S., and Barnaby C. Reeves, D.Phil., for the TITRe2 Investigators. N Engl J Med 2015; 372:997-1008 [March 12, 2015](#) DOI: 10.1056/NEJMoa1403612