

## II. Research Summary

The use of ultrasound to guide central line insertion has been shown to improve patient safety, yet relatively few training programs teach health care professionals how to use it for this purpose. The goal of this proposal is to develop a web-based training program that can be used to train professionals across the United States and to validate its effectiveness. In the first specific aim, the simulation program that has been developed at the Washington University School of Medicine Department of Radiology will be transferred to the web and data will be collected for assessment purposes. The program, developed with the use of the Department's archive of radiological records, consists of a tiered series of training exercises that become progressively more complex. A panel of expert interventional radiologists will be convened to develop a set of standards for automated scoring of each exercise. In the second specific aim, the program will be validated by determining whether anesthesiology residents who train using the web-based program can direct a 'simulated' needle to central venous targets more efficiently and effectively than peers who do not participate in the program. The outcomes of this project will be: a) a validated interactive training program that increases the adoption of an ultrasound-guided central venous access; and b) evidence that web-based training and simulation are effective instructional tools.