The task for students preparing to work in neurological rehabilitation is to understand neuroscience at both the anatomical and behavioral levels. The task for educators preparing students for clinical practice is to help them acquire and integrate information from the anatomical and behavioral levels and apply that information to clinical problems. Computer-aided instruction (CAI) provides a powerful representational tool to portray neuroscience information in a clinical educational environment. Increasingly, CAI resources are being incorporated into existing curricula for educating health care providers.

The research questions were:
1. Did use of the Learning Module improve students' knowledge of the structure and function of the spinothalamic tract (LSTT)?
2. Did use of the Learning Module improve students' knowledge of clinical examination of the spinothalamic tract (LSTT)?

Relevance
As more clinical education programs enlist technology to improve learning outcomes, it becomes essential to establish the efficacy of these adjuncts to traditional instructional methods.

ANALYSES
Friedman test, Wilcoxon signed ranks test, and Mann-Whitney U tests were used to determine changes in student knowledge after viewing the learning module.

RESULTS
Test time: pre to post     pre to post1     post1 to post2

Within Group Results
Anatomy
Experimental Gp. p=.002 M = module taken at this time point
p=.007
p=.299
Control Gp p=.096 p=.001
M = module taken at this time point
p=.006
Clinical
Experimental Gp. No difference within groups p=0.717
Control Gp No difference within groups p=0.059

Between Group Results
Anatomy p=.837 p=.085 p=.357
Clinical p=.750 p=.034 p=.772

SUBJECTS
Thirty two entry-level physical therapy students from a west coast university, who were matriculated in an introductory neurotherapeutics course, served as subjects for this study.

METHODS AND MATERIALS
Before and after reviewing a computer-based learning module students took a paper and pencil test about the anatomy and clinical examination of the LSTT system. The learning module stood alone and was not adjunct to lecture on the same material. Students were randomly assigned to control and experimental groups. A pretest, post-test 1, and post-test 2 design was used. The control group got the module between pretest and post-test 1 and the experimental group got the module between post-test 1 and post-test 2.

The results of this study extend the literature supporting the efficacy of computer-based instruction to include introductory neuroscience education for entry-level physical therapy students. Without being coupled with traditional lecture on the same content, this learning module demonstrated the ability to significantly increase student knowledge about the anatomy but not clinical examination of the LSTT. Significant differences between groups at the pretest 1 measurement period are attributed to a statistical aberration.

SUMMARY
The results of this study indicate that a computer-based instruction module was capable of significantly improving the knowledge of entry-level physical therapy students about the anatomy of the spinothalamic tract. The learning module was used independent of lecture on the same material.