# SAMPLE FUNDED RESEARCH PROPOSAL

Research Proposal to the
Joint Research Committee – NCSBN

| 1.  PROJECT TITLE: | | |
|---|---|---|
| An Investigation of Item Response Time Distributions as Indicators of Compromised NCLEX Item Pools | | |

| 2.  PRINCIPAL INVESTIGATOR: | | CO-PRINCIPAL INVESTIGATOR: (if applicable) |
|---|---|---|
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3.

An Investigation of Item Response Time Distributions as Indicators of

Item response times can provide valuable information for assessing the degree to which an item pool has been compromised and this response time information is routinely collected during an NCLEX administration. This information has been used to examine candidate behavior for individuals who run out of time, but hasn't yet been exploited to examine item exposure.

Item response time has been previously shown to be useful in identifying unusual examinee behavior. Schnipke and Scrams (2002) showed that at the end of speeded, high-stakes computer-based tests (CBTs), some examinees strategically switch from trying to identify correct answers to the items (termed

the item.  That is, increased advance knowledge should result in higher accuracy for rapid responses. The greater the degree of advance knowledge for an item, the greater the increase in accuracy will be observed.

We propose to conduct a study in which we will explore NCLEX data for evidence of shifts in response time distributions and accuracy of rapid responses.  The response time distributions and accuracy rates for a set of pilot tested items will serve as reference distributions.  Then, after these items have been in the operational pool for a period of time, a new set of response time distributions and accuracy rates will be generated for the same set of items based only on the later NCLEX administrations.  If examinees have gained advance knowledge of these items, comparisons between the data from the two time points should reveal evidence of the shifts predicted above.

In this initial study, we will compare the pilot test data to the data from a single later time point.  If the predicted shifts in response time distributions and accuracy rates are observed, then we will propose additional studies to refine our research methods.  The ultimate goal is to develop a procedure that measurement practitioners can use to assess the degree to which their CAT pools have been compromised by advance knowledge.  This will allow them to make more effective decisions regarding when item pools need to be changed.

Two elements differentiate this study from the work NCSBN is currently doing with Caveon.  First, the approach used here is designed for use with adaptive tests, which should enable it to identify more fine-grained deviations from expectation.  Second, the methodology used in this series of studies wiln so-(h)-9 t(i)3(s)etbies o hav13( s)-22(es)2( )11(f)-17(r)

study will compare rapid responding to recalibration to percent-correct drift as processes for item identification.

References

Schnipke, D. L., & Scrams, D. J. (2002). Exploring issues of examinee behavior: Insights gained from response-time analyses. In Mills, C. N., Potenza, M.T., Fremer, J. J., & Ward, W. C. (Eds.). Computer-based testing: Building the foundation for future assessments. Mahwah, NJ: Lawrence Erlbaum Associates.

Wise, S. L., & Kong, X. (2005). Response time effort: A new measure of examinee motivation in computer-based tests. Applied Measurement in Education, 18, 163-183.

**BUDGET SUMMARY**
Research Proposal to the
Joint Research Committee – NCSBN

**BUDGET SUMMARY**

| CATEGORY | Cost | Use these additional columns to split out costs each phase, if proposing a multi-phased project | | | |
|---|---|---|---|---|---|
| **DIRECT COSTS\*** | | | | | |
| 1. Personnel salaries and wages | $17,000 | | | | |
| 2. Fringe benefits | | | | | |
| 3. Consultants and contracts | | | | | |
| 4. Travel | | | | | |
| 5. Supplies and materials | $500 | | | | |
| 6. Communications (Telephone, postage, etc.) | | | | | |
| 7. Equipment (Purchase) | | | | | |
| 8. Other (Equipment rental, etc.) | | | | | |
| **TOTAL** | $17,500 | | | | |

\*Note that Indirect costs or other overhead charges will not be reimbursed

**BUDGET JUSTIFICATION NARRATIVE**

Project personnel costs include data analysis and report writing.  Funds for supplies will cover expenses for printing, copying, postage, and long-distance telephone calls.