



## NBCE'S PSYCHOMETRIC SUMMER INTERNSHIP 2019

**Overview.** The National Board of Chiropractic Examiners (NBCE) is an independent third-party testing agency for the chiropractic profession. Headquartered in Greeley, Colorado, USA, the NBCE was incorporated in 1963; it administered its first exams in 1965. The NBCE was created to meet the regulatory needs of state licensing boards. NBCE's exams include testing of pertinent clinical decision-making as well as assessment of appropriate patient interactions. Today, all 50 states and the District of Columbia require successful completion of the NBCE examinations for licensure, providing the chiropractic profession a single pathway to licensure.

The mission of the NBCE is Ensuring Professional Competence through Excellence in Testing. In support of that mission, we design and administer assessments that are useful for the chiropractic profession, its regulators, and the public at large. As the global leader in chiropractic testing, we understand the importance of advancing assessment in the 21<sup>st</sup> century. The intern will contribute to innovation and advancement through involvement in the NBCE's testing programs.

**The NBCE's Psychometric Summer Internship is a roughly eight-week program beginning on May 28, and ending on July 26, 2019.** The intern will have an opportunity to work with the psychometric team through scoring cycles of two programs—the Part II and Part IV exams. The intern will collaborate with psychometric data analysts under the supervision of the psychometrician. The intern may have an opportunity to propose a research project, which may involve the use of NBCE's data. The details of such collaboration will be established with the intern on individual basis. All finalized deliverables will be provided to the NBCE at the completion of the eight-week internship that the intern may be requested to return to the NBCE after the internship to present the report and findings.

**Internship Description.** The internship will offer an opportunity to work with the staff at the Department of Psychometrics and Research on developing a project that fits the intern's research interest and the overall needs of the NBCE. The intern will have an opportunity to:

- Observe/participate in the complete cycle of operational scoring:
  - Data validity verification
  - Analyses based on Classical Test Theory (Diagnostic Item Analysis)
  - Calibration using 2PL/3PL or Graded Response models
  - Scaling and Equating
- Collaborate on NBCE's current research projects that may lead to conference presentations and/or publications in peer-reviewed measurement journals
- Gain experience with statistical modeling using Linear Models, Generalized Linear Models, and Multivariate Statistics including Factor Analysis and Structural Equation Modeling
- An opportunity to propose a dissertation using NBCE's data
- Continue to collaborate with NBCE staff beyond the internship until the completion of the project



### *Areas of Possible Research Interests*

- IRT models for testlet items and items violating assumptions of local independence
- Innovative methods for testing IRT model fit
- Psychometric methods with latent variables
- Higher-level factor analysis for dimensionality study
- Score stability (anchor stability) studies
- Equating and Scaling studies

### *Qualifications*

- University of Northern Colorado, Department of Applied Statistics and Research Methods doctoral student. Preference will be given to doctoral students in their final years of the program.
- Proficiency in Applied Linear Modeling (Applied Statistics, Applied Regression Analysis), Logistic Regression Modeling, Factor Analysis, Classical Test Theory, and IRT is essential and required. (Students are expected to have excelled in SRM 502, SRM 610, SRM 611, SRM 625, and PSY 674, for example.).
- Ideal candidates will have experience with Structural Equation Modeling, Longitudinal Data Analysis, and Generalized Linear Modeling. (Students would have excelled in SRM 611, SRM 619, SRM 629, SRM 635, and PSY675 for example.).
- Should be proficient in a data management software (at least one: SAS, SQL, R), a software for statistical modeling (at least two: SAS, SPSS, R, STATA), and a software for modeling with latent variables (*Mplus*).

*Award.* The NBCE's Psychometric Internship will offer a \$6,000 stipend.

*Application Procedure.* Applicants should submit a curriculum vitae, a graduate school transcript (does not need to be official), and a statement of purpose describing the interest in the internship and general research interests. Application materials may be emailed or mailed to the NBCE and must be received by **March 31, 2019**. The internship award will be announced by **April 15, 2019**. Materials and/or questions should be submitted to:

Igor Himelfarb, Ph.D., Director of Psychometrics and Research  
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