



Workshop Information
Diagnostic Measurement: Theory, Methods, and Applications
Prof. André A. Rupp, University of Maryland, August 2 – 3, 2012



General Information

- Organizers:** Department of Measurement, Statistics, and Evaluation (EDMS)
The Center for Integrated Latent Variable Research (CILVR)
- Instructor:** Prof. André A. Rupp, EDMS Department (<http://education.umd.edu/EDMS/fac/Rupp/>)
- Location:** Adele H. Stamp Student Union, *Benjamin Banneker Room* (both days).
- Price:** \$450 for both days, \$295 for full-time students
- Registration:** To register for the workshop and for travel and lodging information please go to the CILVR website (<http://www.cilvr.umd.edu/Workshops/CILVRworkshoppageDCM.html>)
- Textbook:** All registered participants receive a paperback copy of the book on which the workshop is based (see page 3) on site: Rupp, A. A., Templin, J., & Henson, R. A. (2010). *Diagnostic measurement: Theory, methods, and applications*. New York: The Guilford Press.
- Slides & Data:** The slides and sample data sets for all workshop sessions will be made available for download on the website listed above during the week of the workshop at the latest.

Workshop Schedule

Thursday, August 2

- 08:30 – 09:00 Continental Breakfast (*provided*)
09:00 – 10:45 Introduction, Chapter 1, Chapter 2
10:45 – 11:00 Break
11:00 – 12:30 Chapter 3, Chapter 4
12:30 – 01:30 Lunch (*not provided*)
01:30 – 03:00 Chapter 5
03:00 – 03:15 Break
03:15 – 05:00 Chapter 6

Friday, August 3

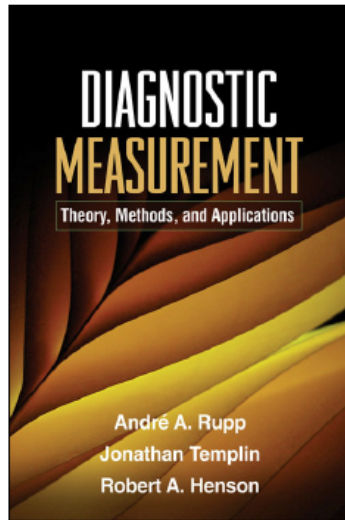
- 08:30 – 09:00 Continental Breakfast (*provided*)
09:00 – 10:45 Chapter 7, Chapter 8
10:45 – 11:00 Break
11:00 – 12:30 Chapter 9
12:30 – 01:30 Lunch (*not provided*)
01:30 – 03:00 Chapter 12, Chapter 13
03:00 – 03:15 Break
03:15 – 04:30 Chapter 14, Chapter 10, Chapter 11
04:30 – 05:00 Synthesis & Concluding Remarks

Here is what participants for this workshop had to say about it:

1. It is a quite a challenge for an instructor to cram so much heavy-duty quantitative material into two days and A. Rupp met this challenge extraordinarily well as compared to other courses I've had on topics such as BILOG & TESTFACT. He engaged participants in lively discussions and emphasized the critical differences between models which he explained conceptually in regards to real data.
2. Excellent! I've struggled to understand the literature in this field (coming from a different field myself). This course really provided a "roadmap" to understand it. Thanks! The book is great...I've been reading it and it's really a contribution.
3. I know I speak for [others], too, when I say how informative and helpful the workshop was on DCMs. Bravo, bravissimo! [Dr. Rupp] conducted [the workshop] like a true maestro. [...] Thanks, again, for an enjoyable two days.
4. Instructor and the newly developed materials were excellent. All in all a very rewarding professional development experience.
5. Fantastic course! Really loved working with real data & examples. Also liked the structure of seeing the theoretical motivation & the applications to adequately do the analysis.
6. This was a very worthwhile workshop. Well-presented and structured.



I hope to see you at Maryland in 2012!



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Diagnostic Measurement

Theory, Methods, and Applications

André A. Rupp, Department of Measurement, Statistics, and Evaluation,
University of Maryland

Jonathan Templin, Department of Educational Psychology and Instructional
Technology, University of Georgia

Robert A. Henson, Department of Educational Research Methodology,
The University of North Carolina at Greensboro

“The most authoritative, comprehensive source to date on every important aspect of diagnostic measurement, including theory, methods, and applications...The writing is clear and smooth, making this complex subject matter much more accessible and less intimidating than one might expect.”

—**Lihshing Leigh Wang**, School of Education, University of Cincinnati

“A real strength of this book is its breadth of coverage. It addresses the importance of embedding diagnostic assessments in a long-term diagnostic process and describes the theoretical underpinnings of diagnostic classification models (DCMs).”

—**Lou DiBello**, Learning Sciences Research Institute, University of Illinois–Chicago

This book provides a comprehensive introduction to the theory and practice of diagnostic classification models (DCMs), which are useful for statistically driven diagnostic decision making. DCMs can be employed in a wide range of disciplines, including educational assessment and clinical psychology. For the first time in a single volume, the authors present the key conceptual underpinnings and methodological foundations for applying these models in practice. Specifically, they discuss a unified approach to DCMs, the mathematical structure of DCMs and their relationship to other latent variable models, and the implementation and estimation of DCMs using *Mplus*. The book’s highly accessible language, real-world applications, numerous examples, and clearly annotated equations will encourage professionals and students to explore the utility and statistical properties of DCMs in their own projects.

Contents

1. Introduction
- I. Theory: Principles of Diagnostic Measurement with DCMs**
2. Implementation, Design, and Validation of Diagnostic Assessments
3. Diagnostic Decision Making with DCMs
4. Attribute Specification for DCMs
- II. Methods: Psychometric Foundations of DCMs**
5. The Statistical Nature of DCMs
6. The Statistical Structure of Core DCMs
7. The LCDM Framework
8. Modeling the Attribute Space in DCMs
- III. Applications: Utilizing DCMs in Practice**
9. Estimating DCMs Using Mplus
10. Respondent Parameter Estimation in DCMs
11. Item Parameter Estimation in DCMs
12. Evaluating the Model Fit of DCMs
13. Item Discrimination Indices for DCMs
14. Accommodating Complex Sampling Designs in DCMs