

NATHANIEL J. S. BROWN

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POSITIONS

Acting Assistant Professor

2007–present

Learning Sciences Program
Department of Counseling and Educational Psychology
School of Education, Indiana University

AREAS OF SPECIALIZATION

Embodied Cognition Cognitive Ethnography
Conceptual Change in Science Objective Measurement
Embedded Classroom Assessment

EDUCATION

Ph.D. in Science and Mathematics Education

2009 (expected)

Graduate Group in Science and Mathematics Education (SESAME)
University of California, Berkeley

Dissertation: *Characterizing and measuring student explanations of chemical equilibrium*
Committee: Andrea diSessa, Rogers Hall, Angelica Stacy (chair), Mark Wilson

M.Sc. in Chemistry

2004

Department of Chemistry
Cambridge University

Dissertation: *¹³C-Labelled synthesis of possible intermediates in the biosynthesis of chloroeremomycin*
Supervisor: Jonathan Spencer

B.S. in Chemistry

1998

Department of Chemistry
Harvey Mudd College

Dissertation: *3-Iminobis(acetic acid)salicylaldehyde: A key intermediate in the synthesis of a photoreversible calcium chelator*
Supervisor: Alison McCurdy

AWARDS

NATIONAL

Spencer Foundation Dissertation Fellow 2004–2005
National Science Foundation Graduate Research Fellow 1999–2002
Winston Churchill Foundation Fellow 1998–1999

UNIVERSITY

University Fellow, UC Berkeley

2002–2004

PUBLICATIONS

**Advances in Rasch Measurement: Volume 2* (forthcoming). Brown, N. J. S., Duckor, B., Draney, K., & Wilson, M. (Eds.), Maple Grove, MN: JAM Press.

Brown, N. J. S. (2005). The multidimensional measure of conceptual complexity. Berkeley Evaluation and Assessment Research (BEAR) Center Report Series, 2005-04-01, University of California, Berkeley.

Brown, N. J. S. (2004). Measuring conceptual understanding of chemical equilibrium: A case study. In M. Wilson, *Constructing measures: An item response modeling approach* (supplemental material), Mahwah, NJ: Erlbaum.

*Banach, M., Brown, N. J. S., Carroll, C., Gillespie, N. M., Glaser, D., Hall, R., & Ryu, A. J. (2002). Constituting "missing objects" in learning conversations. In P. Bell, R. Stevens, & T. Satwicz (Eds.), *Keeping learning complex: The proceedings of the fifth international conference of the learning sciences (ICLS)* (pp. 606-610), Mahwah, NJ: Erlbaum.

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PRESENTATIONS

INVITED COLLOQUIA

Brown, N. J. S., Wilson, M. R., Dray, A., & Lee, Y. (March, 2008). Assessing literacy in the classroom: The BEAR Assessment System. Striving Readers Local Evaluator Conference, United States Department of Education.

Brown, N. J. S. (September, 2006). Modeling and testing ordered coding schemes using Rasch measurement. Center for Research in Mathematics and Science Education (CRMSE) Brown-bag Seminar, San Diego State University.

Brown, N. J. S. (February, 2005). Methodology in conceptual change research: Characterizing explanations of chemical phenomena. Education in Mathematics, Science, and Technology (EMST) & Graduate Group in Science and Mathematics Education (SESAME) Colloquium, University of California, Berkeley.

PROFESSIONAL MEETINGS

Brown, N. J. S., Wilson, M. R., Nagashima, S. O., Timms, M., Schneider, S. A., & Herman, J. L. (March, 2008). A model of scientific reasoning. Paper presented at the Annual Meeting of the American Educational Research Association (New York, NY).

Nagashima, S. O., Wilson, M. R., Brown, N. J. S., Timms, M., Arnold, S. A., & Herman, J. L. (March, 2008). Application of a model of scientific reasoning to written assessments. Paper presented at the Annual Meeting of the American Educational Research Association (New York, NY).

Brown, N. J. S., Wilson, M. R., Dray, A., & Lee, Y. (March, 2008). Assessing literacy in the classroom: The BEAR Assessment System for SLIC. Paper presented at the Annual Meeting of the American Educational Research Association (New York, NY).

- Kennedy, C. A., Brown, N. J. S., Draney, K., & Wilson, M. (April, 2006). Using progress variables and embedded assessment to improve teaching and learning. Paper presented at the Annual Meeting of the American Educational Research Association (San Francisco, CA).
- Brown, N. J. S., Kennedy, C. A., Draney, K., & Wilson, M. (April, 2006). Assessing a learning progression in science: Solving psychometric issues. Presentation at the International Objective Measurement Workshop (Berkeley, CA).
- Brown, N. J. S. (April, 2005). A multidimensional framework for measuring conceptual understanding: Undergraduate student explanations of chemical equilibrium. Paper presented at the Annual Meeting of the American Educational Research Association (Montréal, Canada).
- Brown, N. J. S. & Duckor, B. (July, 2004). The development and refinement of construct maps: What we are learning about the BEAR Assessment System in the field. Presentation at the International Objective Measurement Workshop (Cairns, Australia).
- Wilson, M. & Brown, N. J. S. (July, 2004). Measurement as struggle. Presentation at the International Objective Measurement Workshop (Cairns, Australia).
- Brown, N. J. S. (April, 2004). Performance analysis: Characterizing knowing in a clinical interview. Paper presented at the Annual Meeting of the American Educational Research Association (San Diego, CA).
- Gillespie, N. M., Ryu, A. J., Brown, N. J. S., & Loper, S. J. (April, 2004). Integrating situated perspectives and interactional analysis: Knowing and learning in science and math education. Presentation at the Annual Meeting of the American Educational Research Association (San Diego, CA).
- Brown, N. J. S., Draney, K., Kennedy, C., Liu, L., & Wilson, M. (November, 2003). Measuring student progress: Buoyancy concepts and explanations. Presentation at the DFG-NSF Workshop on Research and Development in Mathematics and Science Education (Washington, DC).
- Ryu, A. J., Gillespie, N. M., Loper, S. J., & Brown, N. J. S. (October, 2003). Knowing as an activity, part 1: Producing explanatory accounts and negotiating standards of accountability. Presentation at the Research in Undergraduate Mathematics Education Conference (Scottsdale, AZ).
- Brown, N. J. S., Loper, S. J., Gillespie, N. M., & Ryu, A. J. (October, 2003). Knowing as an activity, part 2: Argumentation and the negotiation of technical terms. Presentation at the Research in Undergraduate Mathematics Education Conference (Scottsdale, AZ).
- Brown, N. J. S. (April, 2003). Students as bystanders: Didactic instruction as a privileged dialogue with a non-existent student surrogate. Paper presented at the Annual Meeting of the American Educational Research Association (Chicago, IL).

TEACHING

GRADUATE

School of Education, IU Bloomington

Education-Y 527: Educational Assessment and Psychological Assessment Fall 2008

Education-P 540: Learning and Cognition in Education Spring 2008, Fall 2008

Graduate School of Education, UC Berkeley

Education 298A: Design and Scoring of Classroom Assessments Spring 2004

UNDERGRADUATE

School of Education, IU Bloomington	
Education-P 312: Learning: Theory into Practice	Fall 2007
College of Chemistry, UC Berkeley	
Chemistry 1A: General Chemistry	Fall 2000, Fall 2001, Fall 2002
Chemistry 1B: General Chemistry	Spring 2001

HIGH SCHOOL

Multicultural Engineering Program, UC Berkeley	
Academic Boot Camp	Summer 2002, Summer 2003

SERVICE

CONFERENCE ORGANIZATION

13 th International Objective Measurement Workshop	2006
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COMMITTEES

Graduate Studies, School of Education, IU Bloomington	2008–2011
Learning Sciences Minor & Double Major (Chair), School of Education, IU Bloomington	2008–2009
Learning Sciences Graduate Service Courses (Chair), School of Education, IU Bloomington	2008–2009
Learning Sciences Faculty Search, School of Education, IU Bloomington	2007–2008

REVIEWING

Journals

<i>Journal of the Learning Sciences</i>	2005
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Edited Volumes

Advances in Rasch Measurement: Volume 2 (forthcoming). Brown, N. J. S., Duckor, B., Draney, K., & Wilson, M. (Eds.), Maple Grove, MN: JAM Press.

Conferences

American Educational Research Association Annual Meeting	
Division C, Section 6 (Cognitive, Social, and Motivational Processes)	2005, 2008
Division G, Section 1 (Local Contexts of Teaching and Learning)	2005
SIG–Rasch Measurement	2005, 2008