

Amy N. Spiegel

Methodology and Evaluation Core Facility
Social and Behavioral Sciences Research Consortium
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Education

University of Minnesota Minneapolis, MN	Ph.D.	Measurement and Evaluation Department of Educational Psychology Thesis Advisors: Drs. Wayne W. Welch and Robert H. Bruininks
University of Minnesota Minneapolis, MN	M.A./Ed.S.	School Psychology Department of Educational Psychology
Rice University Houston, TX	B. A.	American Cultural Studies (Interdepartmental degree)

Professional Experience

<u>Research Associate Professor & Evaluator</u>	July, 2016 – present	Methodology & Evaluation Research Core Facility, Social and Behavioral Sciences Research Consortium (SBSRC) University of Nebraska-Lincoln
<u>Evaluator</u>	1994 - 2017	Center for Instructional Innovation University of Nebraska-Lincoln
<u>Research Associate Professor</u>	Feb, 2006 – 2017	Department of Educational Psychology University of Nebraska-Lincoln
<u>Instructor</u>	Spring, 2007	Department of Educational Psychology University of Nebraska-Lincoln Special offering for School Psychology Leadership Specialization in RtI
<u>Research Assistant Professor</u>	Sept, 1996 – Feb, 2006	Department of Educational Psychology, University of Nebraska-Lincoln
<u>Instructor</u>	Summer, 1996	Department of Educational Psychology, University of Nebraska-Lincoln
<u>Director of Evaluation</u>	1994 - 1997	Nebraska Mathematics and Science Initiative, University of Nebraska-Lincoln
<u>Research Assistant</u>	1988 - 1993	Department of Educational Psychology, University of Minnesota, Minneapolis, MN
<u>Evaluation Consultant</u>	1992 - 1994	Moundsvew School District, Moundsvew, MN and Department of Educational Psychology, University of Minnesota, Minneapolis, MN
<u>Teaching Assistant</u>	1992 - 1993	Department of Educational Psychology, University of Minnesota, Minneapolis, MN

Publications

Refereed Articles

- Matuk, C., Hurwich, T., Spiegel, A., & Diamond, J. (2019). How do teachers use comics to promote engagement, equity, and diversity in science classrooms? *Research in Science Education*, <https://doi.org/10.1007/s11165-018-9814-8>
- Hill, P. W., McQuillan, J., Hebets, E., Spiegel, A., & Diamond, J. (2018). Informal science experiences among urban and rural youth: Exploring differences at the intersections of socioeconomic status, gender and ethnicity. *Journal of STEM Outreach*, 1(1). <https://doi.org/10.15695/jstem/v1i1.28>
- Hill, P. W., McQuillan, J., Spiegel, A. N., & Diamond, J. (2018). Discovery orientation, cognitive schemas, and disparities in science identity in early adolescence. *Sociological Perspectives* 6(1), 99-125. doi:10.1177/0731121417724774
- Hill, P. W., McQuillan, J., Talbert, E. J., Spiegel, A. N., Gauthier, G. R., & Diamond, J. (2017). Science possible selves and the desire to be a scientist: Mindsets, gender bias, and confidence during early adolescence. *Social Sciences* 6(2), 55. doi:10.3390/socsci6020055.
- Gauthier, G. R., Hill, P. W., McQuillan, J., Spiegel, A. N., & Diamond, J. (2017). The potential scientist's dilemma: How the masculine framing of science shapes friendships and science job aspirations. *Social Sciences* 6(1), 14. doi:10.3390/socsci6010014
- Diamond, J., McQuillan, J., Spiegel, A. N., Hill, P. W., Smith, R., West, J., & Wood, C. (2016). Viruses, vaccines and the public. *Museums and Social Issues*, 11(1), 9-16. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4980086>
- Diamond, J., Jee, B., Matuk, C., McQuillan, J., Spiegel, A., & Uttal, D. (2015). Museum monsters and victorious viruses: Improving public understanding of emerging biomedical research. *Curator*, 58(3): 299-311.
- Block, F., Hammerman, J., Horn, M., Spiegel, A., Christiansen, J., Phillips, B., Diamond, J., Evans, E. M., & Shen, C. (2015). Fluid grouping: Quantifying group engagement around interactive tabletop exhibits in the wild. ACM Proceedings of the CHI Conference on Human Factors in Computing Systems. (Best Paper Award ACM CHI 2015). Available at: <https://lifeonearth.seas.harvard.edu/wp-content/uploads/pn564-blockA1-with-header.pdf>
- Jee, B. D., Uttal, D. H., Spiegel, A. N., & Diamond, J. (2015). Expert-novice differences in mental models of viruses, vaccines, and the causes of infectious disease. *Public Understanding of Science*, 24(2), 241-256. Available at: <http://pus.sagepub.com/content/24/2/241>
- Spiegel, A. N., McQuillan, J., Halpin, P., Matuk, C., & Diamond, J. (2013). Engaging teenagers with science through comics. *Research in Science Education*, 43(6), 2309-2326. doi: 10.1007/s11165-013-9358-x Available at: <http://link.springer.com/article/10.1007%2Fs11165-013-9358-x>
- Spiegel, A. N., Evans, E. M., Frazier, B., Hazel, A., Tare, M., Gram, W., & Diamond, J. (2012). Changing museum visitors' conceptions of evolution. *Evolution: Education and Outreach*, 5, 43-61. DOI 10.1007/s12052-012-0399-9
- Evans, E. M., Spiegel, A. N., Tare, M., Frazier, B. F., Cover, S., Gram, W., & Diamond, J. (2010). A Conceptual Guide to Natural History Museum Visitors' Understanding of Evolution. *Journal of Research in Science Teaching*, 47(3), 326-353.
- Evans, E. M., Spiegel, A., Gram, W., & Diamond, J. (2009). Integrating Developmental and Free-Choice Learning Frameworks to Investigate Conceptual Change in Visitor Understanding, *BriefCAISE Reports* [On-line], January/February 2009, Issue 5. Available at: <http://caise.insci.org/news/62/51/briefCAISE---Jan-2009-Issue-5/d,Program-Item-Detail/>

- Spiegel, A. N., Evans, E. M., Gram, W., & Diamond, J. (2006). Museum visitors understanding of evolution. *Museums and Social Issues*, 1(1), 69-86.
- Spiegel, A. N., Rockwell, S. K., Acklie, D. S., Frerichs, S. W., French, K., & Diamond, J. (2005). Wonderwise 4-H: Following in the Footsteps of Women Scientists. *Journal of Extension* [Online], 43(4) Article 4FEA3. Available at: <http://www.joe.org/joe/2005august/a3.shtml>
- Diamond, J., Spiegel, A., Meier, D., & Disbrow, S. (2004). Virus and the whale: Exploring evolution in a museum collaboration. *Proceedings of the Third Conference of the International Museum and Collections (UMAC)*, (pp. 7-11). Norman, OK: Sam Noble Oklahoma Museum of Natural History.
- Spiegel, A. N., Rockwell, S. K., Acklie, D. S., Frerichs, S. W., French, K. & Diamond, J. (May, 2004). *Wonderwise 4-H: Following in the Footsteps of Women Scientists*. Summary of Conference Proceedings, Association for International Agricultural and Extension Education, Dublin, Ireland. (CD-ROM available through <http://www.aiaee.org/index.htm>.)
- Spiegel, A. N., Bruning, R.H., & Giddings, L. (1999). Using responsive evaluation to evaluate a professional conference. *American Journal of Evaluation*, 20 (1), 57-67.
- Runge, A., Spiegel, A., Pytlik-Zillig, L. M., Dunbar, S., Fuller, R., Sowell, G., & Brooks, D. (1999). Hands-on computer use in science classrooms: The skeptics are still waiting. *Journal of Science Education and Technology*, 8(1), 33-44.
- Wise, V.L., Spiegel, A. N., & Bruning, R. H. (1999). Using teacher reflective practice to evaluate professional development in mathematics and science. *Journal of Teacher Education*, 50 (1), 42-49.
- Putnam, J. W., Spiegel, A. N., & Bruininks, R. H. (1995). Future directions in education and inclusion of students with disabilities: A delphi investigation. *Exceptional Children*, 61(6), 553-577.
- McGrew, K. S., Algozzine, B., Ysseldyke, J. E., Thurlow, M. L., & Spiegel, A. N. (1995). Including individuals with disabilities in national databases: Creating a failure to communicate. *The Journal of Special Education*, 28(4), 472-487.
- Ittenbach, R. F., Abery, B. H., Larson, S. A., Spiegel, A. N., & Prouty, R. W. (1994). Community adjustment of young adults with mental retardation: Overcoming barriers to inclusion. *Palaestra*, 10(2), 32-42.
- McGrew, K. S., Thurlow, M. L., & Spiegel, A. N. (1993). An investigation of the exclusion of students with disabilities in national data collection programs. *Educational Evaluation and Policy Analysis*, 15(3), 339-352.
- Ittenbach, R. F., Abery, B. H., Larson, S. A., Spiegel, A. N., & Prouty, R. W. (1993). Community adjustment of young adults with mental retardation: A developmental perspective. *Palaestra*, 9(4), 19-24.
- Ittenbach, R. F., Spiegel, A. N., McGrew, K. S., & Bruininks, R. H. (1992). Confirmatory factor analysis of early childhood ability measures within a model of personal competence. *Journal of School Psychology*, 30(3), 307-323.
- Spiegel, A. N., Steffens, K. M., Rynders, J. E., & Bruininks, R. H. (1990). The Early Motor Profile: Correlation with the Bruininks-Oseretsky Test of Motor Proficiency. *Perceptual and Motor Skills*, 71, 645-646.
- Bruininks, R. H., Steffens, K., Spiegel, A., & Werder, J. (1989). The Bruininks-Oseretsky Test of Motor Proficiency: Development, research and intervention strategies. In H. Van Coppenolle & J. Simons (Eds.), *Better by Moving, Proceedings of the 2nd International Symposium Psychomotor Therapy and Adapted Physical Activity* (pp. 17-41). Leuven, Belgium: Acco.

Books

Diamond, J., Gilbert, D., Wagler, A., Spiegel, A., & Schaben, C. (2011). *Exploring Science Through Media: The Omaha Science Media Project 2009-2010*. Lincoln, NE: College of Journalism and Mass Communications, University of Nebraska-Lincoln.

Chapters

Diamond, J., Evans, E. M. & Spiegel, A. N., (2012). Walking whales and singing flies: An evolution exhibit and assessment of its impact. In K. R. Rosengren, S. Brem, E. M. Evans, & G. Sinatra (Eds.) *Evolution Challenges: Integrating research and practice in teaching and learning about evolution* (pp. 586-614). Oxford University Press.

Edwards, L. K., & Spiegel, A. N. (1994). Aggregating results from multiple studies. In D. Gray & T. Thompson (Eds.), *Destructive behavior: Epidemiology, measurement, and information management* (pp. 117-129). CA: Sage.

Multimedia Kits

Diamond, Judy, Gary Heusel, Cathy Burson, Gary Hochman, Luis Peón-Casanova, Linda Allison, Sarah Disbrow, Carl Hartman, Kathy French, Saundra Frerichs, Amy Spiegel. 2002. *Genetic Counselor*. Wonderwise Science Kit. Great Plains National, University of Nebraska, Lincoln.

Diamond, Judy, Gary Heusel, Adriana Ocampo, Gary Hochman, Linda Allison, Sarah Disbrow, Roger Simonsen, Carl Hartman, Kathy French, Saundra Frerichs, Amy Spiegel. 2002. *Space Geologist*. Wonderwise Science Kit. Great Plains National, University of Nebraska, Lincoln.

Diamond, Judy, Gary Heusel, Tolani Francisco, Joe Turco, Linda Allison, Chet Kincaid, Sarah Disbrow, Kathy French, Saundra Frerichs, Amy Spiegel. 2002. *Vet Detective*. Wonderwise Science Kit. Great Plains National, University of Nebraska, Lincoln.

Diamond, Judy, Carmen Cid, Gary Hochman, Linda Allison, Roger Simonsen, Sarah Disbrow, Marian Langan, Monica Norby, Amy Spiegel. 2001. *Urban Ecologist*. Wonderwise Science Kit. Great Plains National, University of Nebraska, Lincoln. 2nd Edition.

Diamond, Judy, Fatimah L.C. Jackson, Gary Hochman, Linda Allison, Suzanne Gardner, Mary Knudson, Kara M. Sheil, Roger Simonsen, Monica Norby, Sarah Disbrow, Amy Spiegel. 2001. *African Plant Explorer*. Wonderwise Science Kit. Great Plains National, University of Nebraska, Lincoln. 2nd Edition.

Diamond, Judy, Margaret R. Bolick, Gary Hochman, Suzanne Gardner, Mary Knudson, Roger Simonsen, Sarah Disbrow, Monica Norby, Amy Spiegel. 2001. *Pollen Detective*. Wonderwise Science Kit. Great Plains National, University of Nebraska, Lincoln. 2nd Edition.

Diamond, Judy, Janalee Caldwell, Bruce Thiel, Linda Allison, Suzanne Gardner, Mary Knudson, Kara M. Sheil, Sarah Disbrow, Amy Spiegel. 2001. *Rainforest Ecologist*. Wonderwise Science Kit. Great Plains National, University of Nebraska, Lincoln. 2nd Edition.

Diamond, Judy, Judy Sakanari, Joe Turco, Suzanne Gardner, Mary Knudson, Kara M. Sheil, Sarah Disbrow, Amy Spiegel. 2001. *Parasite Sleuth*. Wonderwise Science Kit. Great Plains National, University of Nebraska, Lincoln. 2nd Edition.

Diamond, Judy, Brenda Ballachey, Gary Hochman, Suzanne Gardner, Mary Knudson, Kara M. Sheil, Sarah Disbrow, Amy Spiegel. 2001. *Sea Otter Biologist*. Wonderwise Science Kit. Great Plains National, University of Nebraska, Lincoln. 2nd Edition.

Selected Local Publications and Evaluation Reports

Spiegel, A.N. (2019). *Comparative Virology Research Training Program (T32 Program) Formative Evaluation Report*. Unpublished report. Lincoln, NE: University of Nebraska-Lincoln, Methodology and Evaluation Research Core Facility.

- Spiegel, A.N. (2019) *Front End Evaluation Report for CSBR: Natural History: Digitizing and Conserving Specimens in the Manter Library of Parasitology Project*. Lincoln, NE: University of Nebraska-Lincoln, Methodology and Evaluation Research Core Facility.
- Spiegel, A. N. (2018). *Fogarty AIDS Malignancies Training and Research International Program (AMTRIP): Formative Evaluation Report*. Lincoln, NE: University of Nebraska-Lincoln, Social and Behavioral Sciences Research Consortium.
- Spiegel, A. N. (2018). *Mini-Report for Fogarty: Epidemiology Workshop Survey Results. Fogarty AIDS Malignancies Training and Research International Program (AMTRIP)*. Lincoln, NE: University of Nebraska-Lincoln, Social and Behavioral Sciences Research Consortium.
- Spiegel, A.N. (2018). *Biology of Human Summative Evaluation Report, 2012-2018*. Lincoln, NE: University of Nebraska-Lincoln, Methodology and Evaluation Research Core Facility. Available at http://worldofviruses.unl.edu/wp-content/uploads/2018/09/BioHumanFinalReport_.pdf
- Spiegel, A.N. (2018). *Comparative Virology Research Training Program (T32 Program) Formative Evaluation Report*. Unpublished report. Lincoln, NE: University of Nebraska-Lincoln, Methodology and Evaluation Research Core Facility.
- Spiegel, A. N. & Hill, P.W. (2017). *Civil Engineering Department Faculty Survey Results*. Lincoln, NE: University of Nebraska-Lincoln, Social and Behavioral Sciences Research Consortium.
- Hammerman, J.K.L., Smith, J., Stroud, R, & Spiegel, A.N. (2017). *ARISE End-of-Project Evaluation Report*. Boston, MA: TERC.
- Spiegel, A. N. (2017). *Fogarty AIDS Malignancies Training and Research International Program (AMTRIP) Formative Evaluation Report*. Lincoln, NE: University of Nebraska-Lincoln, Social and Behavioral Sciences Research Consortium.
- Hill, P. W. & Spiegel, A. N. (2017). *Summary of Findings: UNL Civil Engineering Department Focus Groups*. Lincoln, NE: University of Nebraska-Lincoln, Social and Behavioral Sciences Research Consortium.
- Spiegel, A. N. & LeRoy-Toren, S. (2017). *Community Learning Center Club: Being Human, Spring 2017: Attendance Summary, Student Feedback, and Compilation of Weekly Write-ups*. Lincoln, NE: University of Nebraska-Lincoln, Social and Behavioral Sciences Research Consortium.
- Spiegel, A. N. (2017). *Nebraska Vision for Science: Conference Evaluation Report*. Lincoln, NE: University of Nebraska-Lincoln, Social and Behavioral Sciences Research Consortium.
- Spiegel, A. N. & LeRoy-Toren, S. (2017). *Community Learning Center Club: Health and Human Rights, Fall 2016: Attendance Summary and Compilation of Weekly Write-ups*. Lincoln, NE: University of Nebraska-Lincoln, Social and Behavioral Sciences Research Consortium.
- Spiegel, A. N. & LeRoy-Toren, S. (2016). *Community Learning Center Club: Who Am I? Exploring Ourselves, Spring 2016: Attendance Summary, Student Survey Results, and Compilation of Weekly Write-ups*. Lincoln, NE: University of Nebraska-Lincoln, Social and Behavioral Sciences Research Consortium.
- Spiegel, A. N. (2015). *Summative Evaluation of Teacher Professional Development Summer 2015 Workshop: Explore Students' Science Identity & Inquiry-based Investigations of Biology*. Lincoln, NE: University of Nebraska-Lincoln, Center for Instructional Innovation.
- Spiegel, A. N. (2015). *LPS Science Professional Development & UNL Connectors Event: Brief Summary Report*. Lincoln, NE: University of Nebraska-Lincoln, Center for Instructional Innovation.
- Spiegel, A. N. & LeRoy-Toren, S. (2015, August). *Community Learning Center Club: 3D Science, Attendance Summary and Compilation of Weekly Write-ups*. Lincoln, NE: University of Nebraska-Lincoln, Center for Instructional Innovation.

- Spiegel, A. N. & LeRoy-Toren, S. (2015). *CLC Microbe Maniacs Science Reporter: Evaluation Summary and Compilation of Weekly Write-ups*. Lincoln, NE: University of Nebraska-Lincoln, Center for Instructional Innovation.
- Spiegel, A. N. (2015). *Occupied! App: Pilot Testing. UNL iLab App Development Formative Evaluation*. Lincoln, NE: University of Nebraska-Lincoln, Center for Instructional Innovation.
- Spiegel, A. N. (2014). *Biology of Human Formative Evaluation: Youth Feedback on Occupied! Comic*. Lincoln, NE: University of Nebraska-Lincoln, Center for Instructional Innovation.
- Spiegel, A. N. (2013). *Microbe Maniacs Evaluation: Summer 2013*. Lincoln, NE: University of Nebraska-Lincoln, Center for Instructional Innovation.
- Hammerman, J.K.L., Spiegel, A.N., & Christiansen, J. (2013). *Life on Earth Evaluation Report*. Cambridge, MA: STEM Educational Evaluation Center, SEEC at TERC.
- Spiegel, A.N. (2013) *BioHuman Project Formative Evaluation Report: Trial Testing on "What is Human?" Language Chapter*. Lincoln, NE: University of Nebraska-Lincoln, Center for Instructional Innovation.
- Bureau of Sociological Research (BOSR) and Spiegel, A. (2013). *Biology of Human: Evaluative Focus Group Report*. Lincoln, NE: University of Nebraska-Lincoln, BOSR.
- Spiegel, A. N. (2012). *World of Viruses Summative Demographic Report*. Lincoln, NE: University of Nebraska-Lincoln, Center for Instructional Innovation.
- Spiegel, A. N. (2011). *Antarctica's Climate Secrets: Summative Evaluation of Youth Activities*. Lincoln, NE: University of Nebraska-Lincoln, Center for Instructional Innovation.
- Spiegel, A. (2011). *World of Viruses Summative Evaluation Process: Testing the Pilot Study Instrument*. Lincoln, NE: University of Nebraska-Lincoln, Center for Instructional Innovation.
- Spiegel, A. N. (2011). *iPad Apps Trial Test Results: World of Viruses Formative Evaluation with Middle Level and High School Students*. Lincoln, NE: University of Nebraska-Lincoln, Center for Instructional Innovation.
- Spiegel, A. N. (2010). *Omaha Science Media Project: Compilation of Evaluation Reports 2009-2010*. Lincoln, NE: University of Nebraska-Lincoln, Center for Instructional Innovation.
- Spiegel, A. N. (2010). *Omaha Science Media Project 2010 Workshop Evaluation: Teacher Survey Results*. Lincoln, NE: University of Nebraska-Lincoln, Center for Instructional Innovation.
- Spiegel, A. N. (2010). *Omaha Science Media Project 2009 Workshop Evaluation Summary*. Lincoln, NE: University of Nebraska-Lincoln, Center for Instructional Innovation.
- Spiegel, A. (2010). *Minority Health Cell Phone Formative Evaluation: Youth Trial Test of Virus Nightmare Adventure Game (iPhone App) & Never Ending Battle Comic (iPhone App version)*. Lincoln, NE: University of Nebraska-Lincoln, Center for Instructional Innovation.
- Spiegel, A. N. (2009). *Omaha Science Media Project 2009 Workshop Follow-up: Participating Teachers' Plans and Activities Using New Science Media Skills*. Lincoln, NE: University of Nebraska-Lincoln, Center for Instructional Innovation.
- Spiegel, A. N., Struthers, A., & Carpenter, L. (2009). *World of Viruses Formative Evaluation Report: Trial Testing of Graphic Story, Cartoon Panel, Podcast, and Essay*. Lincoln, NE: University of Nebraska-Lincoln, Center for Instructional Innovation.
- Spiegel, A. N. (2009). *World of Viruses Front End Evaluation Report*. Lincoln, NE: University of Nebraska-Lincoln, Center for Instructional Innovation.
- Evans, E. M., Spiegel, A. N., Gram, W., Frazier, B., Tare, M., Thompson, S., and Kay, D. (2005). *Front End Evaluation Report for the Explore Evolution Project. Part I: Museum Visitors Explain*

- Seven Evolutionary Problems. Part II: Museum Visitor Reactions to Explore Evolution Topics.* Lincoln, NE: University of Nebraska-Lincoln, Center for Instructional Innovation.
- Spiegel, A. N., Evans, E. M., Gram, W., Frazier, B., Kay, D., Loope, C., and Allison, L. (2005). *Formative Evaluation Report for the Explore Evolution Project: Museum Visitors Interact with the Explore Evolution Exhibition.* Lincoln, NE: University of Nebraska-Lincoln, Center for Instructional Innovation.
- Spiegel, A. N. (2005, January). *Humanizing Physics Project: Final Evaluation Report.* Lincoln, NE: University of Nebraska-Lincoln, Center for Instructional Innovation.
- Spiegel, A. N. (2004, May) *Humanized Physics: 142 Follow-up Survey.* Lincoln, NE: University of Nebraska-Lincoln, Center for Instructional Innovation.
- Spiegel, A. N. (2004, April). *Summary of Youth and Adults Reached by the Wonderwise 4-H Project.* Lincoln, NE: University of Nebraska-Lincoln, Center for Instructional Innovation.
- Spiegel, A. N. (2004, February). *Explore Evolution Front End Survey Pilot Internal Evaluation Report.* Lincoln, NE: University of Nebraska-Lincoln, Center for Instructional Innovation.
- Spiegel, A. N. (2003, September). *Humanizing Physics Project: Year 2 Evaluation Progress Report.* Lincoln, NE: University of Nebraska-Lincoln, Center for Instructional Innovation.
- Spiegel, A. N. (2003, May). *Wonderwise 4-H: The Trial Testing Process.* Lincoln, NE: University of Nebraska-Lincoln, Center for Instructional Innovation.
- Frerichs, S. W., & Spiegel, A. N. (2003, May). *Dissemination of the Wonderwise 4-H Project: An Evaluation of the Process.* Lincoln, NE: University of Nebraska-Lincoln, Center for Instructional Innovation.
- Spiegel, A. N. (2002, October). *Math Matters: Internal Evaluation Summary.* Lincoln, NE: University of Nebraska-Lincoln, Center for Instructional Innovation.
- Spiegel, A. N., Dethlefs, T. M., & Diamond, J. (2000). *Girls and Boys Learning Science: Lessons from the Wonderwise Project.* Lincoln, NE: University of Nebraska-Lincoln, Center for Instructional Innovation.
- Spiegel, A. N., & Pytlik Zillig, L.M. (2000). *Final Evaluation Report: Multimedia Mathematics Across the Curriculum at the University of Nebraska-Lincoln and Oklahoma State University.* Lincoln, NE: University of Nebraska-Lincoln, Center for Instructional Innovation.
- Spiegel, A. N. & Pytlik Z., L. M. (1998, May). *Math and Science Education in Nebraska and the Nation.* University of Nebraska-Lincoln, Center for Instructional Innovation.
- Spiegel, A.N., & Dethlefs, T. M. (1997) *Measuring the Effectiveness of the Wonderwise Kits in the Classroom: Classroom Comparison Study.* Lincoln, NE: University of Nebraska-Lincoln, Center for Instructional Innovation.
- Lowrey, S., & Spiegel, A. N. (1997). *A Profile of Nebraska Teachers Who Enrolled in the NMSI PEERS Academy.* Lincoln, NE: University of Nebraska-Lincoln, Center for Instructional Innovation.
- Wise, V. L., & Spiegel, A. N. (1997). *Nebraska High School Course Offerings and Graduation Requirements in Mathematics and Science.* Lincoln, NE: University of Nebraska-Lincoln, Center for Instructional Innovation.
- Dethlefs, T.M., Spiegel, A.N., & Bruning, R.H. (1997). *Impact Study of NMSI Teacher Professional Development: Teacher Survey Results, Spring 1996.* Lincoln, NE: University of Nebraska-Lincoln, Center for Instructional Innovation.

- Pytlik Z., L. M. & Spiegel, A. N. (1997). *Lessons from "Paperless Physics": Using Multimedia Math Across the Curriculum (MMATC) modules in the classroom*. Lincoln, NE: University of Nebraska-Lincoln, Center for Instructional Innovation.
- Pytlik Z., L. M., & Spiegel, A. N. (1996). *Reflecting on the Mentor's Wonderwise Workshop*. Lincoln, NE: Nebraska Math and Science Initiative.
- Spiegel, A. N., & Dethlefs, T. M. (1996). *A Comparison of K-3 PEERS Graduates and Pre-PEERS Teachers: Teaching Beliefs and Practices*. Lincoln, NE: University of Nebraska-Lincoln, Center for Instructional Innovation.
- Lowrey, S., & Spiegel, A. N. (1996, February). *Math Vantage: Who Uses It?* Lincoln, NE: University of Nebraska-Lincoln, Center for Instructional Innovation.
- Spiegel, A. N. (1995, February). *Evaluation of the Joint Strategic Planning Conference of NATM, NATS, & NMSI Regional Coalitions, February 3-5, 1995*. Lincoln, NE: University of Nebraska-Lincoln, Center for Instructional Innovation.
- Spiegel, A.N., & Dethlefs, T. M. (1995, October) *Continuing the Movement for Change: 1995 PEERS Academy Workshops*. Lincoln, NE: University of Nebraska-Lincoln, Center for Instructional Innovation.
- Spiegel, A. N. (1994). *Student and School Variables Related to the Academic Engagement of At-Risk Students*. Doctoral dissertation, University of Minnesota, Minneapolis, MN.
- McGrew, K. S., Spiegel, A. N., Thurlow, M. L., & Kim, D. (1994). *Matching Information in National Data Collection Programs to a Model of School Completion Outcomes and Indicators*. Minneapolis, MN: University of Minnesota, National Center on Educational Outcomes.
- McGrew, K.S., Algozzine, B., Ysseldyke, J. E., Thurlow, M. L., & Spiegel, A. N. (1993). *The Identification of People with Disabilities in National Data Bases: A Failure to Communicate*. Minneapolis, MN: University of Minnesota, National Center on Educational Outcomes.
- McGrew, K. S., Thurlow, M. L., Shriner, J. G., & Spiegel, A. N. (1992). *Inclusion of Students with Disabilities in National and State Data Collection Programs*. Minneapolis, MN: University of Minnesota, National Center on Educational Outcomes.
- McGrew, K. S., Spiegel, A. N., Thurlow, M. L., Ysseldyke, J. E., Bruininks, R. H., Deno, S. L., & Shriner, J. G. (1991). *Secondary Data Analysis: A Review of Major Conceptual, Measurement, and Technical Issues*. Minneapolis, MN: University of Minnesota, National Center on Educational Outcomes.

Conference Presentations and Publications

- Ledesma, J., Hill, P.W., Gauthier, G., McQuillan, J., Spiegel, A.N., and Diamond, J. (October, 2017). Disseminating Science Identities Through Afterschool Science: Peer Group Effects. Presentation at the 2017 Annual Conference of the Computational Social Science Society of the Americas (CSSSA), Santa Fe, NM.
- Gauthier, G., McQuillan, J., Hill, P. W., Spiegel, A.N., & Diamond, J. (August, 2016). The potential scientist's dilemma: Gender differences in the salience of science in same-sex adolescent friendships. Presentation at the American Sociological Association (ASA) Annual Meeting, Seattle, WA.
- McQuillan, J., Hill, P. W., Spiegel, A.N., & Diamond, J. (August, 2015). Social inequality in science identity among middle school youth. Presentation at the American Sociological Association (ASA) Annual Meeting, Chicago, IL.
- McQuillan, J., Hill, P. W., Spiegel, A.N., & Diamond, J. (March, 2015). Identities in middle school: Lessons from a school-wide social network study. Presentation at the Annual Meeting of the Midwest Sociological Society, Kansas City, KS.

- McQuillan, J., Hill, P. W., Spiegel, A.N., & Diamond, J. (March, 2015). More than competence: Science identity by gender and race among middle school youth. Presentation at the Sociology of Gender Brownbag (FemSem) at the University of Wisconsin Department of Sociology, Madison, WI.
- McQuillan, J., Hill, P. W., Spiegel, A.N., & Diamond, J. (March, 2015). Activating adolescent science identity: Research and practice. Presentation at the National Science Teachers Association (NSTA) National Conference on Science Education, Chicago, IL.
- Diamond, J., McQuillan, J., & Spiegel, A. N. (Feb, 2015). Comics, Zombies & Hip Hop: Leveraging Pop Culture for Science Engagement: Engaging Teenagers with Science through Comics. Paper accepted at AAAS Annual Conference, San Jose, CA.
- Diamond, J., McQuillan, J., & Spiegel, A. N. (Sept, 2014). Activating adolescent science identity: Research and practice. Presentation at the Nebraska Association of Teachers of Science (NATS) Conference, Fremont, NE.
- Hill, P., McQuillan, J., and Spiegel, A. (July, 2014). Are you a science kind of person? Gender differences in science identity among middle school youth. Presentation at STEM Thinktank and Conference, Nashville, TN.
- Hammerman, J. K. L., Spiegel, A. N., & Christensen, J. (2013). Using innovative technologies to evaluate the *Life on Earth* Museum Exhibit. Paper presented at the annual meeting of the American Evaluation Association, Washington, DC.
- Jee, B.D., Uttal, D.H., Spiegel, A., & Diamond, J. (2013). Students' and teachers' beliefs about the microbiological structure and activity of viruses and vaccines. Poster presented at the 2013 Society for Research in Child Development Biennial Meeting, Seattle, Washington.
- Jee, B. D., Uttal, D. H., Diamond, J., & Spiegel, A., & Diamond, J. (2012). Mental models of viruses, vaccines, and the causes of infectious disease. Poster presented at the 24th Annual Meeting of the Association for Psychological Science. Chicago, IL.
- Jee, B. D., Uttal, D. H., Crouch, C., Spiegel, A., & Diamond, J. (2010). Mental models of virology in experts and novices. Paper presented at the 32nd Conference of the Cognitive Science Society. Portland, OR.
- Evans, E. M., Frazier, B., Hazel, A., Kiss, A., Lane, J.D., Spiegel, A., & Diamond, J. (August, 2010). Treethinking: Do pictorial representation of phylogenetic relationships help or hinder museum visitors' understanding of evolution? Understanding the Tree of Life Conference. Carnegie Museum of Natural History, Pittsburgh, PA.
- Jee, B. D., Uttal, D. H., Spiegel, A., & Diamond, J. (May, 2010). Understanding the microbiological world: People's beliefs and reasoning about viruses. Paper presented at Annual Meeting of the Midwestern Psychological Association. Chicago, IL.
- Jee, B. D., Uttal, D.H., Spiegel, A. & Diamond, J. (October, 2009) Students and Teachers' Mental Models of Viruses. *Society for Research in Child Development*, San Antonio, TX.
- Evans, E. M., Spiegel, A., & Diamond, J. (April, 2009). Contradictory or Complementary? Creationist and Evolutionist Explanations of Origins. In Legare, C. (Chair). Using Religion and Science to Explain the Riddles of Existence: The Case of Origins, Disease, and Death. Biennial meeting of the Society for Research in Child Development, Denver, CO.
- Evans, E. M., Spiegel, A., Gram, W., Diamond, J., Frazier, B. F., Cover, S., Tare, M. (April, 2006). A conceptual guide to museum visitors' understanding of evolution. Annual Meeting of the American Education Research Association, San Francisco.

- Spiegel, A. N., & Fuller, R. G. (August, 2004). Humanized Physics Project: Follow-Up Study of Former Students Using an Email Survey. Invited paper at the American Association of Physics Teachers Annual Summer Meeting. *AAPT Announcer*, 34 (2), 87. Sacramento, CA.
- Spiegel, A. N., Rockwell, S. K., Acklie, D. S., Frerichs, S. W., French, K. & Diamond, J. (May, 2004). *Wonderwise 4-H: Following in the Footsteps of Women Scientists*. Association for International Agricultural and Extension Education, Dublin, Ireland.
- Acklie, D. S., Rockwell, S. K., Spiegel, A., Frerichs, S. & Diamond, J. (Nov. 8, 2003). Integrating Relationship Maps into Semi-Structured Interviews to Evaluate Role Modeling for Youth. Presented to the American Association's Annual Meeting, Reno, NV. Available: <http://danr.ucop.edu/eee-aea>
- Dunbar, S. R., Plano Clark, V., Fuller, R., Spiegel, A. N., & Pytlik Z., L. M. (August, 1998) Computer Algebra Systems in Computer Intensive Physics. Presented at the American Association of Physics Teachers' Annual Summer Meeting. Lincoln, NE.
- Spiegel, A. N., & Pytlik Z., L. M. (August, 1998) Evaluation of a Computer Intensive Physics Course. Presented at the American Association of Physics Teachers' Annual Summer Meeting. Lincoln, NE.
- Spiegel, A. N. (September, 1997). Lessons Learned from Paperless Physics. Presented at the 1997 PKAL Workshop Physics Curricula: What Works and What Needs to be Done.
- Hutchings, C., Plano Clark, V.L., Moore, C.J., Fuller, R.G., Kirkman, T., Dunbar, S. R., & Spiegel A. N. (August, 1997) A Multimedia Physics Module for Temperature, Heat, and the First Law of Thermodynamics. *AAPT Announcer*, 27 (2), 120. Presented at the American Association of Physics Teachers Summer Meeting. Denver, CO.
- Hutchings, C., Plano Clark, V.L., Moore, C.J., Fuller, R.G., Kirkman, T., Dunbar, S. R., & Spiegel A. N. (1997) Innovations in Technical Training: A Paperless Course in Physics. Presented at the 1997 Multi-Redcom Technical Training Meeting, Naval Sea Systems Command. Arlington, VA.
- Hutchings, C., Plano Clark, V.L., Moore, C.J., Kirkman, T., Fuller, R.G., Dunbar, S. R., & Spiegel A. N. (April, 1997) Innovations in Physics Pedagogy: A Paperless Physics Course. *AAPT Announcer*, 27 (1), 11. Presented at the 1997 Joint American Physical Society/American Association of Physics Teachers Meeting. Washington, DC.
- Hutchings, C., Plano Clark, V.L., Moore, C.J., Fuller, R.G., Kirkman, T., Dunbar, S. R., & Spiegel A. N. (April, 1997) A Paperless Course in Physics. Presented at the 30th Annual Small College Computing Symposium, University of Wisconsin-Parkside. Kenosha, WI.
- Fuller, R.G., Plano Clark, V.L., & Spiegel, A.N. (January, 1997). Preparing for Paperless, Multitmedia Physics. *AAPT Announcer*, 26 (4), 65. Presented at the American Association of Physics Teachers Winter Meeting. Phoenix, AZ.
- Lowrey, S., Spiegel, A.N., & Dethlefs, T. (November, 1996). Statewide systemic initiative evaluation: Embedding evaluation within classrooms. Paper presented at the national meeting of the American Evaluation Association, Atlanta, GA.
- Dethlefs, T.M. & Spiegel, A.N. (November, 1996). Impact analysis of a professional development program using classroom observation and high school teacher- and student-report data. Paper presented at the national meeting of the American Evaluation Association, Atlanta, GA.
- Spiegel, A.N. & Dethlefs, T.M. (November, 1996). Follow-up evaluation of a K-3 math/science professional development workshop. Paper presented at the national meeting of the American Evaluation Association, Atlanta, GA.
- Spiegel, A.N. & Lowrey, S. (November, 1996). Profile assessment of Nebraska teachers of mathematics and science reveals strengths and weaknesses compared to the 1993 national survey

sample. Paper presented at the national meeting of the American Evaluation Association, Atlanta, GA.

Spiegel, A.N., Bruning, R.H., & Giddings, L. (April, 1995). Interactive evaluation of an assessment conference. Presentation at the national meeting of the American Educational Research Association San Francisco, CA.

McGrew, K. S., Spiegel, A. N., & Thurlow, M. L. (April, 1993). Inclusion of students with disabilities in state and national assessment. Presentation at the national meeting of the Council for Exceptional Children, San Antonio, TX.

Thurlow, M., Shriner, J., Spiegel, A., Kim, D., & Vanderwood, M. (September, 1992). National and state agenda on educational outcomes: Implications for individuals with mental retardation. Presentation at the American Association on Mental Retardation, Region VIII 1992 Annual Conference.

Spiegel, A. N. (April, 1992). Structure of motor abilities in early childhood. Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA.

McGrew, K. S., Thurlow, M. L., & Spiegel, A. N. (April, 1992). The sensitivity of the national education data system to the assessment of outcomes for students with disabilities. Paper presented at the annual meeting of the National Council on Measurement in Education, San Francisco, CA.

Ittenbach, R. F., Abery, B. H., Larson, S. A., Prouty, R. W., & Spiegel, A. N. (July, 1991). Community adjustment of young adults with mental retardation: A developmental perspective. Paper presented at the 1991 University of Minnesota Sport Science Institute, Minneapolis, MN.

Ittenbach, R. F., Li, X., & Spiegel, A. N. (October, 1990). Analyses with missing data: A comparison of techniques for researchers in developmental disabilities. Paper presented at the meeting of the American Association of University Affiliated Programs for Persons with Developmental Disabilities, Madison, WI.

Bruininks, R. H., Steffens, K., Spiegel, A., & Werder, J. (May, 1989). The Bruininks-Oseretsky Test of Motor Proficiency: Development, research and intervention strategies. Paper presented at the 2nd International Symposium Psychomotor Therapy and Adapted Physical Activity, Leuven, Belgium.

Funded Activities

Evaluation

Internal Evaluator, Worlds of Connections: Engaging Youth with Health Research through Network Science Stories in Augmented Reality. \$1,328,444. National Institutes of Health Science Education Partnership Award, 09/01/2018 – 07/31/2023. Julia McQuillan (UNL), PI, Kirk Dombrowski (UNL), Bilal Khan (UNL), Christine Cutucache (UNO), and Trish Wonch Hill (UNL), Co-PI's.

Evaluator, Natural History: Digitizing Data and Conserving Specimens in the Manter Laboratory of Parasitology, \$499,988, National Science Foundation, 08/01/2018 – 7/31/2021. Scott Gardner (UNL), PI.

Senior Evaluator, Adopting Research-based Instructional Strategies for Enhancing STEM Education (ARISE STEM Education), \$1,990,279. National Science Foundation WIDER (Widening Implementation & Demonstration of Evidence-Based Reforms) Program. 4/14 - 3/17. Lance Perez (UNL), PI, Ruth Heaton, Leilani Arthurs, Brian Couch, Douglas Golick, Kevin Lee, and Marilyne Stains (all UNL), Co-PI's.

Evaluator and Learning Research Team Member, Biology of Human: Understanding Ourselves through the Lens of Current Biomedical Research, \$1,328,618. National Institutes of Health

Science Education Partnership Award, 07/12 – 06/17. Judy Diamond (UNL), PI, Charles Wood, and Julia McQuillan (all UNL), Co-PI's.

Evaluation Team Member, Senior Personnel, Life on Earth, \$1,726,392, National Science Foundation, 9/10-9/13. Chia Shen (Harvard University), PI, Judy Diamond (UNL) and E. Margaret Evans (Co-PI's).

Evaluator, Omaha Science Media, \$1,877,803. Sherwood Foundation, 9/08 – 9/10. Judy Diamond (UNL), PI.

Internal Evaluator, World of Viruses, \$1,595,314. National Institutes of Health, 07/07 – 06/12. Judy Diamond (UNL), PI, Moira Rankin (SMCI), Richard O'Grady (AIBS), and Charles Wood (UNL), co-PI's.

Internal Evaluator, IPY: Engaging Antarctica, \$1,168,014. National Science Foundation, International Polar Year, 10/06 – 9/11. J. Michael Farrell (NET), Judy Diamond (UNL), and LuAnn Dahlman (TERC), PI's.

Evaluation Coordinator, Explore Evolution, \$2.8 million. National Science Foundation, Informal Science Education, 6/03 – 5/06. Judy Diamond (UNL), Principal Investigator.

Evaluator, Humanizing Physics: College Physics with Medical Applications Enhanced by Multimedia and Mathematical Modeling, \$498,870 – National Science Foundation, 5/01-5/04. Robert Fuller (UNL), Vicki Plano Clark (UNL), Nancy Beverly (Mercy College), and Beth Ann Thacker (Texas Tech University), PI's.

Evaluator, Wonderwise 4-H, \$830,325 – National Science Foundation, 6/00-5/03. Judy Diamond (UNL) and Gary Heusel (4-H), PI's.

Evaluator, Preparing Elementary Teachers to Meet the Needs of Girls from Underrepresented Populations: a Collaborative Project of UNL Teachers College and the Lincoln Children's Museum, \$29,035 – Dwight D. Eisenhower Professional Development Program, 2/00 – 7/01. Gayle Buck (UNL); Lindy Bull (Lincoln Children's Museum) and Vicki Plano-Clark (UNL), PI's.

Evaluator, Math Matters: Improving Elementary Mathematics Teacher Education in Nebraska, \$199,911 – National Science Foundation, 1/00- 6/02. Ruth M. Heaton, W. James Lewis, Patience Fisher (all UNL), PI's.

Evaluator, Wonderwise Online, \$325,000 – Howard Hughes Medical Institute, 10/97 - 6/01. Judy Diamond (UNL), PI.

Evaluator, Multimedia Math Across the Curriculum and Across the Nation, \$946,394 – National Science Foundation, 10/96 – 8/00. Steven Dunbar (UNL), Benny Evans (OSU), Robert Fuller (UNL), PI's.

Director of Evaluation, 5/94-9/97, Nebraska Math and Science Initiative, \$10,000,000 – National Science Foundation, 10/91 – 9/97. W. James Lewis, Sandra Scofield, Melvin Thornton, Betsy Kean, and Teresita Aguilar (all UNL), PI's.

Evaluator, 3/95- 9/97, Wonderwise/Kid Science Reporter, \$500,000 – Howard Hughes Medical Institute, 7/92-9/97. Judy Diamond (UNL), PI.

Grants and Contracts:

University of Nebraska-Lincoln Teaching Council, Multimedia Lab Modules in Physiology and Mathematics: Training and Assessment, \$4000. 8/97-12/97. (Steven B. Ryan, Steven R. Dunbar, and Amy N. Spiegel, PI's)

SRI International, Nebraska Mathematics and Science Curriculum Frameworks Case Study, \$11,554. 3/97-4/97. (Amy N. Spiegel and Roger Bruning, Key Personnel)

Professional Memberships

American Educational Research Association
American Evaluation Association

Honors and Recognition

Invited Advisory Panelist, SciGirls TV Series, Dragonfly TV, Twin Cities Public Television, 2007
University of Minnesota Doctoral Dissertation Fellowship Awardee, 1993 – 1994

Special Training

Dimensions of Success (DoS) Observer Certification, awarded March 2019, by the Director of the PEAR (Partnerships in Education and Resilience) Institute to use the DoS observation tool, an instrument developed with NSF funding to assess out-of-school STEM program quality.

Collaborative IRB (Institutional Review Board) Training Initiative for the Protection of Human Research Subjects, updated August 2018, certified by the University of Nebraska-Lincoln.

Interdisciplinary Certificate in Developmental Disabilities, awarded September 1991, through the University Affiliated Program at the University of Minnesota.

Advanced Studies Institute, Elementary and Secondary Data Analysis Seminar, Center for Research in Human Development and Education, Temple University, July, 1991.