# Lynn S. Liben

Evan Pugh University Professor
Professor of Psychology; Human Development; and Education
The Pennsylvania State University
140 Moore Building ~ 138 Fischer Road ~ University Park, PA 16802
liben@psu.edu ~ 814.863.1718

#### **EDUCATION**

1968 - 1972	Ph.D., University of Michigan, Developmental Psychology
1964 - 1968	B.A., Cornell University; distinction in all subjects; magna cum laude in psychology

# **POSITIONS AT PENN STATE**

Evan Pugh University Professor and Professor of Psychology, Human Development, and Education
Tracy Winfree and Ted H. McCourtney Professor of Child Studies
Distinguished Professor of Psychology, Human Development, and Education
Founding Director, Child Study Center
Department Head, Department of Psychology
Professor of Psychology, College of the Liberal Arts
Associate Professor of Psychology, College of the Liberal Arts (Visiting 1982-1983)
Associate Professor, Division of Individual and Family Studies, College of Human Development

# POSITIONS OUTSIDE PENN STATE (INCLUDING SABBATICAL LEAVES)

Spring 2019	Visiting Scholar, STEM Education Research Centre (SERC), Faculty of Education, University of Canberra, Bruce ACT 2601 Australia
Spring 2012	Visiting Scholar, Department of Applied Psychology, Steinhardt School of Culture, Education, and Human Development; New York University
Fall 2009	Guest Professor, Department of Economics and Behavioral Sciences; Albert Ludwigs University, Freiburg, Germany
Spring 2004	Visiting Professor, Psychology, City University of New York, Graduate Center
Spring 1996	Visiting Fellow, National Geographic Society, Washington, D.C.
Winter 1989	Visiting Scholar, Project Zero, Graduate School of Education, Harvard University
1980 - 1982	Associate Professor Department of Psychology; Research Associate, Learning Research and Development Center, University of Pittsburgh (on leave 1982-1983)
1972 - 1976	Assistant Professor, Center for Development, Learning, and Instruction (Graduate School of Education and Human Development) and Department of Psychology, University of Rochester

#### **GRANTS**

- National Science Foundation: "Designing innovative guided play experiences to empower parents and engage children in STEM learning" Co-PI 2018-2022.
- National Science Foundation: "Addressing the STEM gender gap: Does spatial training enhance middle-school girls' STEM-relevant spatial skills, attitudes, beliefs, and interests?" PI 2011-2017.
- National Geographic Society: "Addressing the National Geographic Bee Gender Gap through Research and Intervention" PI 2010-2014.
- National Science Foundation: "Constructing Mental Images of Geologic Structures from Field Observations" PI 2004-2010.
- National Science Foundation: "SGER: Investigating Map Understanding and Learning in the Context of a Family Museum Exhibit" PI 2006-2007.
- National Science Foundation: "Map and Spatial Skills of Children and Teachers" PI 2001-2005.
- Social Science Research Council: Program on the Arts, "Human Development and the Arts: A Photographic Perspective" Director. 2001-2002.
- National Science Foundation (via TERC): "Visualizing Earth" Co-PI, Director of the Cognitive Analysis of Visualization in Education Group. 1995-1999.
- National Geographic Society: "Geography and Gender: Differential Participation and Success Rates on the Geography Bee." PI 1992-1995; Follow-up grant, PI 2000-2002.
- NICHHD "Sex Hormone Replacement Therapy & Adolescent Behavior" Co-Investigator 1991-1995.
- College of Health & Human Development Interdisciplinary Research Grant: "Sex Hormone Replacement Therapy: Effects on Adolescent Behavior," Co-Investigator 1990.
- National Institute of Education, Teaching and Learning Program Research Grant: "Children's Production and Comprehension of Maps: Increasing Graphic Literacy," PI 1983-1985.
- Department of Education, Doctoral Training Grant: "Psychological Foundations of Special Education," Project Director 1983-1986.
- Office of Education, Doctoral Training Grant: "Developmental Psychology Specialists for Handicapped Children," Project Director: 1982-1985.
- NIH Biomedical Research Support Grant "Studies in Spatial Cognition," 1980-1982. Conference Series, University of Pittsburgh.
- Bureau for the Education of the Handicapped, Graduate Training Grant: "Predoctoral Preparation in Applied Interdisciplinary Research," Acting (1978-1979) & Associate (1977-1978) Project Director.
- The William T. Grant Foundation and the Society for Research in Child Development, PI, Interdisciplinary Study Group Grant: "Theoretical and Practical Implications of Research on the Development of Deaf Children," 1974-1976.
- National Institute of Mental Health, Predoctoral Research Fellowship: "Developmental Studies in Cognition," 1969-1972.
- United States Public Health Service, Traineeship in Developmental Psychology, University of Michigan, awarded 1968-1972; held 1968-1969.

#### **SELECTED ACADEMIC HONORS**

Jean Piaget Society, Distinguished Contributions to Developmental Science Award, 2023 University of Victoria, CA, Lansdowne Scholar Award, 2019

Carleton College, Elizabeth Nason Distinguished Women Visitor Award 2016

Schreyer Honors College, Penn State, Excellence in College Teaching Award, 2006-2007

Faculty Scholar Medal for Outstanding Achievement in the Social Sciences, Penn State, 1998

Distinction in the Social Sciences Award, Penn State; 1995

Fellow, American Psychological Association (Divisions 1, 3, 7, 15)

Charter Fellow, Association for Psychological Science

Charter Fellow, American Educational Research Association

Fellow, Eastern Psychological Association

Woodrow Wilson Fellow, 1968

Honor Societies: Sigma Xi, Psi Chi, 1967, Phi Beta Kappa, 1967

#### **EDITORIAL POSITIONS**

#### Editor-in-Chief:

Monographs of the Society for Research in Child Development (2018-2022)

Monograph Matters (2018-2022)

Ohild Based and (2008-2020)

Child Development (2002-2008)

Journal of Experimental Child Psychology (1983-2002)

Jean Piaget Society Book Series (1981-1991)

### **Editorial Boards (Masthead):**

American Journal of Education; Child Development; Children, Youth and Environments; Current Directions in Psychological Science; Developmental Psychology; Genetic Epistemologist; Journal of Applied Developmental Psychology; Journal of Experimental Child Psychology; Psychological Bulletin; Sex Roles; Spatial Cognition and Computation

#### SOCIETY PRESIDENCIES (6-year terms for each: 2 as President-Elect, 2 as President, 2 as Past-President)

Society for the Study of Human Development (SSHD), 2019 - 2025

Society for Research in Child Development (SRCD), 2011 - 2017

American Psychological Association (APA), Division 7 (Developmental Psychology), 1993 - 1999 Jean Piaget Society (JPS),1979 - 1985

#### OTHER SELECTED POSITIONS IN SOCIETIES & NATIONAL COMMITTEES (Presidencies listed above)

American Council for Co-Educational Schooling:

Director of Research; Board of Directors

American Psychological Association (APA), Division of Developmental Psychology

Fellows Selection Committee; Executive Committee; Convention Program (Chair); Secretary-

Treasurer; Coalition for Psychology in Schools and Education

Association for Psychological Science

Human Capital Initiative Steering Committee; Publications Committee; Summit of Psychological Science Societies Steering Committee

Council of Graduate Departments of Psychology (COGDOP)

Executive Board; Liaison to APA Board of Scientific Affairs

Jean Piaget Society

Board of Directors

National Academy of Sciences

Board of Science Education

National Research Council Committees: Support for Thinking Spatially; Out of School STEM Learning

National Institutes of Health:

Behavioral & Neurosciences Study Section; Life Course Review Committee

National Science Foundation:

Committee of Visitors

Panels: Developmental & Learning Sciences; Teacher/Instructional Materials;

Blue Ribbon Panel: Transitions from Childhood to the Workforce

Society for Research in Child Development

Publications Committee (Chair); Equity and Justice Committee; Finance Committee; Task Force on the Common Rule

Social Science Research Council

Committee on the Arts (Chair)

## ILLUSTRATIVE CONSULTANCIES, ADVISORY POSITIONS

Children's Television Workshop (Sesame Street; 3-2-1- Contact); *Highlights for Children*; New York State Department of Education (reviews of doctoral level graduate programs); Advisory Boards: "Where Are We?" Project, Lamont-Doherty Earth Observatory of Columbia University; "Seeing Exhibit," *Exploratorium*, San Francisco; Cornell Institute for Research on Children (CIRC); "Maps: Tools for Adventure", Indianapolis Children's Museum; Discovery Place, State College, PA; *The Ultimate Block Party*, Temple University; "Bridging the Gap," Teacher's College, Columbia University; National Geographic Society: Roadmap for Geographic Education Research

# **PUBLICATIONS: Journal Articles and Book Chapters**

- Wong, W. I., Shi, S. Y., Li, G., Liben, L. S., Leung, J. S. Y., & Chen, Z. (2025, forthcoming). Mixed-gender anxiety and gender-based relationship efficacy: A cross-lagged study of single-sex (SS) versus coeducational (CE) schooling bridging high school graduation. *Journal of School Psychology*, 109, 101398. https://doi.org/10.1016/j.jsp.2024.101398
- Bierman, K. L., Liben, L. S., Small, M., Connell, J., Heinrichs, B., Menold, J., Miller, S., & Mannweiler, M. (2025, forthcoming). Guided activity kits impact parents' scaffolding of child STEM play. *Learning and Instruction*, 96, 102082. https://doi.org/10.1016/j.learninstruc.2025.102082
- Mannweiler, M. D., Bierman, K. L., & Liben, L. S. (2025) Linking parents' play strategies with their preschoolers' STEM skills: The mediating roles of child STEM talk and self-regulated learning. *Journal of Experimental Child Psychology*, 249, 106095

  https://doi.org/10.1016/j.jecp.2024.106095
- Shi, S. Y., Li, G., Liben, L. S., Chen, Z., & Wong, W. I. (2024). Gender cognitions before and after graduating from single-sex versus coeducational high schools: A longitudinal study using propensity score matching. *Journal of Educational Psychology, 116*(8), 1437-1454. https://doi.org/10.1037/edu0000879
- Signorella, M. L., & Liben, L. S. (2024). Perceptions of skills needed for STEM jobs: Links to academic self-concepts, job interests, job gender stereotypes, and spatial ability in young adults. *Journal of Intelligence*, 12(7):63. https://doi.org/10.3390/jintelligence12070063
- Bierman, K. L., Small, M., Liben, L. S., Connell, J. Menold, J., Miller, S., Heinrichs, B, & Mannweiler, M. D. (2024). Guided STEM activity kits for parents with preschool children: Design, frequency of use, and parent evaluation. *Journal of Research in Childhood Education*, *38*(4), 540–558. https://doi.org/10.1080/02568543.2023.2301104
- Bower, C. A. & Liben, L. S. (2023). Instructors' gestural accuracy affects geology learning in interaction with students' spatial skills. *Journal of Intelligence*, *11*, *192*. https://doi.org/10.3390/jintelligence11100192
- Hilliard, L. J., & Liben, L. S. (2021). Parental socialization about sexism: Do socialization beliefs match behavior? *Research in Human Development, 18* (4), 274-294. https://doi.org/10.1080/15427609.2021.2025014
- Bower, C. A. & Liben, L. S. (2021). Can a domain-general spatial intervention facilitate children's science learning? A lesson from astronomy. *Child Development*, 29 (1), 76-100. https://doi.org/10.1111/cdev.13439
- Schroeder, K. M., & Liben, L. S. (2021). Felt pressure to conform to cultural Gender Roles: Correlates and consequences. Sex Roles, 84, 125-138. https://doi.org/10.1007/s11199-020-01 155-9
- Hilliard, L. J. & Liben, L. S. (2020). Addressing sexism with children: Young adults' beliefs about bias socialization. *Child Development, 91,* 488-507. https://doi.org/10.1111/cdev.13230
- Bigler, R. S., & Liben, L. S. (2020). The interplay of developing morality and gender attitudes. In L. A. Jensen (Ed.), *The Oxford Handbook of Moral Development: An Interdisciplinary Perspective* (pp. 725-745). Oxford, UK: Oxford University Press. https://doi.org/10.1093/oxfordhb/9780190676049.013.42

- Coyle, E. F. & Liben, L. S. (2020). Gendered packaging of a STEM toy influences children's play, mechanical learning, and mothers' play guidance. *Child Development*, *91*(1), 43-62. https://doi.org/10.1111/cdev.13139
- Ribner, A. D., Tamis-LeMonda, C. S., & Liben, L. S. (2020). Mothers' distancing language relates to young children's math and literacy skills. *Journal of Experimental Child Psychology, 196*, 104863, 1-11. https://doi.org/10.1016/j.jecp.2020.104863
- Liben, L. S., Schroeder, K. M., Borriello, G. A., & Weisgram, E. S. (2018). Cognitive consequences of gendered toy play. In E. S. Weisgram & L. M. Dinella (Eds.), *Gender-typing of children's toys* (pp. 213-255). Washington, D.C.: American Psychological Association.
- Borriello, G. A. & Liben, L. S. (2018). Encouraging maternal guidance of preschoolers' spatial thinking during block play, *Child Development*, *89* (4), 1209-1222. DOI: 10.1111/cdev.12779
- Liben, L. S. (2017). A cognitive-developmental perspective on maps in children's literature. In N. Goga & B. Kümmerling-Meibauer (Eds.), *Maps and mapping in children's literature: Landscapes, seascapes, and cityscapes* (pp. 17-39). Amsterdam: John Benjamins.
- Müller, U., & Liben, L. S. (2017). Introduction: Natural spaces and development. *Children, Youth and Environments*, *27*(2), 1-6.
- Liben, L. S. & Coyle, E. F. (2017). Gender development: A relational approach. In A. S. Dick & U. Müller (Eds.), *Advancing developmental science: Philosophy, theory, and method* (pp. 170-184). London: Routledge; Taylor and Francis Group.
- Liben, L. S. (2017). Gender development: A constructivist-ecological perspective. In N. Budwig, E. Turiel, & P. D. Zelazo, (Eds.). *New perspectives on human development* (pp. 145-164). Cambridge, UK: Cambridge University Press.
- Liben, L. S. & Bigler, R. S. (2017). Understanding and undermining the development of gender dichotomies: The legacy of Sandra Lipsitz Bem. Sex Roles, 76, 544-555.
- Coyle, E. F., & Liben, L. S. (2016). Affecting girls' job and activity interests through play: The moderating roles of personal gender salience and game characteristics. *Child Development*, *87*, 414-428.
- Liben, L. S. (2016). We've come a long way baby (But we're not there yet): Gender past, present, and future. *Child Development*, 87, 5–28.
- Plummer, J. D., Bower, C. A., & Liben, L. S. (2016). The role of perspective taking in how children connect reference frames when explaining astronomical phenomena. *International Journal of Science Education*, 38(3), 345-365.
- Liben, L. S. (2015). The STEM gender gap: The case for spatial interventions. *International Journal of Gender, Science, and Technology, 7,* 133-150.
- Liben, L. S. & Müller, U. (2015). Reflections on cognitive development. In L. S. Liben & U. Müller (Eds.). *Cognitive processes.* Volume 2 of the *Handbook of child psychology and developmental science* (7th ed.: pp. 1-8). Hoboken, NJ: Wilev.
- Liben, L. S. (2015). Probability values and human values in evaluating single-sex education, *Sex Roles*, 72, 401-426.
- Liben, L. S., & Downs, R. M. (2015). Map use skills. In M. Monmonier (Ed.), *Cartography in the twentieth century* (pp. 1074-1080). Chicago: University of Chicago Press.
- Liben, L. S. & Bowman, C. R. (2014). The development of memory from a Piagetian perspective. In P. J. Bauer & R. Fivush (Eds.) *The Wiley handbook on the development of children's memory* (pp. 65-86). Malden MA: Wiley-Blackwell.
- Liben, L. S., Bigler, R. S., & Hilliard, L. J. (2014). Gender development: From universality to individuality. In E.T. Gershoff, R. S. Mistry, & D. A. Crosby (Eds.) *Societal contexts of child development: Pathways of influence and implications for practice and policy* (pp. 3-18). New York: Oxford University Press.
- Hilliard, L. J. & Liben, L. S. (2014). Fairness in the face of gender stereotypes: Examining the nature and impact of mother-child conversations. In C. Wainryb & H. E. Recchia (Eds.). *Talking about right and wrong: Parent-child conversations as contexts for moral development* (pp.168-192). Cambridge: Cambridge University Press.
- Liben, L. S. (2014). Perceiving and representing horizontals: From laboratories to natural environments and back again. *Ecological Psychology*, *26*, 158-166.
- Quinn, P. C. & Liben, L. S. (2014). A sex difference in mental rotation in infants: Convergent evidence. *Infancy*, *19*, 103-116.

- Liben, L. S., & Coyle, E. J. (2014). Developmental interventions to address the STEM gender gap: Exploring intended and unintended consequences. In L. S. Liben & R. S. Bigler (Eds.) *The role of gender in educational contexts and outcomes.* Volume 47 of *Advances in child development and behavior* (pp. 77-115). San Diego: Elsevier.
- Bigler, R. S., Hayes, A. R., & Liben, L. S. (2014). Analysis and evaluation of the rationales for single-sex schooling. In L. S. Liben & R. S. Bigler (Eds.) *The role of gender in educational contexts and outcomes*. Volume 47 of *Advances in child development and behavior*. (pp. 225-260). San Diego: Elsevier.
- Liben, L. S. (2014). The individual ↔ context nexus in developmental intergroup theory: Within and beyond the ivory tower. Research in Human Development. 11, 273-290.
- Liben, L. S., Myers, L. J., Christensen, A. E., & Bower, C. A. (2013). Environmental-scale map use in middle childhood: Links to spatial skills, strategies, and gender. *Child Development*, *84*, 2047-2063.
- Halpern, D. F., Eliot, L., Bigler, R. S., Fabes, R. A., Hanish, L. D., Hyde, J., Liben, L. S., & Martin, C. L. (2012). Response to letters on the pseudoscience of single-sex schooling. *Science*, *335*, 166-168.
- Liben, L. S. & Titus, S. (2012). The importance of spatial thinking for geoscience education: Insights from the crossroads of geoscience and cognitive science. In K. A. Kastens & C. A. Manduca (Eds.), *Earth and mind II: A synthesis of research on thinking and learning in the geosciences.* The Geological Society of America, Boulder, CO, Special paper 486, 51-70.
- Myers, L. J., & Liben, L. S. (2012). Graphic symbols as "The mind on paper": Links between children's interpretive theory of mind and symbol understanding. *Child Development*, 83, 186-202.
- Liben, L. S., Kastens, K. A., & Christensen, A. E. (2011). Spatial foundations of science education: The illustrative case of instruction on introductory geological concepts. *Cognition and Instruction, 29,* 45-87.
- Halpern, D. F., Eliot, L., Bigler, R. S., Fabes, R. A., Hanish, L. D., Hyde, J., Liben, L. S., & Martin, C. L. (2011). The pseudoscience of single-sex schooling. *Science*, 333, 1706-1707.
- Li, R., Klippel, A., Liben, L. S., & Christensen, A. E. (2011). The impacts of environment and individual differences on spatial orientation in a mobile context. *Proceedings of the Workshop of Cognitive Engineering for Mobile GIS, COSIT, 780*, 9-16.
- Liben, L. S., (2010). *I am pleased to accept your manuscript:* Publishing your research on child and adolescent development. In V. Maholmes & C. Lomonaco (Eds.), *Applied research in child and adolescent development: A practical guide* (pp. 265-300). New York: Taylor & Francis.
- Weisgram, E. S., Bigler, R. S., & Liben, L. S. (2010). Gender, values, and occupational interests among children, adolescents, and adults. *Child Development, 81,* 778-797.
- Liben, L. S., Myers, L. M., & Christensen, A. E. (2010). Identifying locations and directions on field and representational mapping tasks: Predictors of success. *Spatial Cognition and Computation*, *10*, 105-134.
- Liben, L. S., & Christensen, A. E. (2010). Spatial development: Evolving approaches to enduring questions. In U. Goswami (Ed.), *Blackwell handbook of childhood cognitive development, Second Ed.* (pp. 326-348). Oxford, UK: Wiley-Blackwell Publishers.
- Liben, L. S., Christensen, A. E., & Kastens, K. A. (2010). Gestures in geology: The roles of spatial skills, expertise, and communicative context. In C. Hölscher, T.F. Shipley, M. Olivetti, J. Bateman, & N. S. Newcombe (Eds.), *Spatial cognition VII. LNCS* (pp. 95-111). Heidelberg: Springer-Verlag.
- Münzer, S., Christensen, A. E., & Liben, L. (2010). Finding your way around the environment: Differences and similarities across countries in self-reports. In D. Rapp (Ed.), *Poster Proceedings of International Conference on Spatial Cognition 2010,* 66. Mt. Hood, Oregon.
- Hilliard, L. J., & Liben, L. S. (2010). Differing levels of gender salience in preschool classrooms: Effects on children's gender attitudes and intergroup bias. *Child Development*, *81*, 1787-1798.
- Kastens, K. A., & Liben, L. S. (2010). Children's strategies and difficulties while using a map to record locations in an outdoor environment. *International Research in Geographical and Environmental Education*, 19, 315-340.
- Liben, L. S. (2010). Sex differences in children: The continuing quest to understand and modify them. *Essay Review, Human Development, 53,* 363-368.
- Liben, L. S. (2009). Giftedness during childhood: The spatial-graphic domain. In F. Horowitz, R. Subotnik, & D. Matthews (Eds.), *Incorporating conceptions of giftedness into theories and research on child*,

- adolescent, and adult development (pp. 59-74). Washington, D.C.: American Psychological Association.
- Kastens, K. A., Agrawal, S. & Liben, L. S. (2009). How students and field geologists reason in integrating spatial observations from outcrops to visualize a 3-D geological structure. *International Journal of Science Education*, *31*, 365-394.
- Kastens, K.A., Manduca, C. A., Cervato, C., Frodeman, R., Goodwin, C., Liben, L. S., Mogk, D. W. Spangler, T. C., Stillings, N. A., & Titus, S. (2009). How geoscientists think and learn, *EOS, Transactions, American Geophysical Union*, *90*, 265-272Essaycc
- Lamb, L. M., Bigler, R. S., Liben, L. S., & Green, V. A. (2009). Teaching children to confront peers' sexist remarks: Implications for theories of gender development and educational practice. *Sex Roles, 61,* 361-382.
- Liben, L. S. (2009). The road to understanding maps. *Current Directions in Psychological Science, 18,* 310-315.
- Liben, L. S. (2008). Representational development and the embodied mind's eye. In W. F. Overton, U. Mueller, & J. L. Newman (Eds.), *Body in mind, mind in body: Developmental perspectives on embodiment and consciousness* (pp. 191-224). New York: Lawrence Erlbaum Associates.
- Arthur, A., Bigler, R. S., Liben, L. S., Gelman., S. & Ruble, D. (2008). Gender stereotyping and prejudice in young children: A developmental intergroup perspective. In S. Levy & M. Killen (Eds.), *Intergroup Attitudes and Relations in Childhood through Adulthood* (pp. 66-86). Oxford, UK: Oxford University Press.
- Liben, L. S. (2008). Developing children's appreciation of photographs as informative and aesthetic artifacts. In C. Milbrath & H. M. Trautner (Eds.) *Children's understanding and production of pictures, drawing, and art: Theoretical and empirical approaches* (pp. 155-184). Cambridge, MA: Hogrefe & Huber.
- Liben, L. S. & Bigler, R. S. (2008). Developmental gender differentiation: Pathways in conforming and nonconforming outcomes. Published simultaneously in *Journal of Gay & Lesbian Mental Health*, 12, 95-119 and in R. M. Mathy & J. Drescher, Eds., *Childhood gender nonconformity and the development of adult homosexuality* (pp. 95-119). Binghamton, NY: Haworth Press.
- Myers, L. J. & Liben, L. S. (2008). The role of intentionality and iconicity in children's developing comprehension and production of cartographic symbols. *Child Development*, *79*, 668-684.
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- Liben, L. S. (2008). Reflections on child development: The journal and the field. *Child Development, 79,* 1597-1599.
- Liben, L. S. (2008). Continuities and discontinuities in children and scholarship. *Child Development*, 79, 1600-1605.
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- Liben, L. S. (2008). Understanding maps: Is the purple country on the map really purple? *Knowledge Quest*, *36 (4)*, 20-30.
- Kastens, K. A. & Liben, L. S. (2007). Eliciting self-explanations improves children's performance on a field-based map skills task. *Cognition and Instruction*, *25*, 45-74.
- Liben, L. S. & Myers, L. J. (2007). Children's understanding of maps: What develops? In J. Plumert & J. Spencer (Eds.), *The emerging spatial mind* (pp. 193-218). Oxford, UK: Oxford University Press.
- Szechter, L. E., & Liben, L. S. (2007). Children's aesthetic understanding of photographic art and the quality of art-related parent-child interactions. *Child Development*, 78, 879-894.
- Bigler, R. S., & Liben, L. S. (2007). Developmental intergroup theory: Explaining and reducing children's social stereotyping and prejudice. *Current Directions in Psychological Science*, *16*, 162-166.

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- Liben, L. S. (2006). Education for spatial thinking. In W. Damon & R. Lerner (Series Eds.) and K. A. Renninger & I. E. Sigel (Vol. Eds.), *Handbook of child psychology, sixth edition, volume four: Child psychology in practice* (pp. 197-247). Hoboken, NJ: Wiley.
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- Liben, L. S. (2005). The role of action in understanding and using environmental place representations. In. J. Rieser, J. Lockman, & C. Nelson (Eds.), *Action as an organizer of learning and Development. The Minnesota Symposium on Child Development.* (pp. 323- 361). Mahwah, NJ: Lawrence Erlbaum Associates.
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- Liben, L. S. & Downs, R. M. (2003). Investigating and facilitating children's graphic, geographic, and spatial development. *Journal of Applied Developmental* Psychology, *24*, 663-679.
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# **PUBLICATIONS: Books, Monographs, and Reports**

- Müller, U., & Liben, L. S. (Eds.) (2017). Natural spaces and development. *Children, Youth and Environments*, 27(2).
- Horn, S., Ruck, M., & Liben, L. S. (Eds.) (2016). *Equity and justice in developmental science: Theoretical and methodological issues.* Volume 50 of *Advances in child development and behavior.* Series Editor: J. B. Benson. San Diego: Elsevier.

- Horn, S., Ruck, M., & Liben, L. S. (Eds.) (2016). *Equity and justice in developmental science: Challenges and implications for young people, families, and communities.* Volume 51 of *Advances in child development and behavior.* Series Editor: J. B. Benson. San Diego: Elsevier.
- Liben, L. S. & Müller, U. (Eds.) (2015). *Cognitive processes*. Volume 2 of the *Handbook of child psychology and developmental science* (7th ed.). Editor-in-chief: R. M. Lerner. Hoboken, NJ: Wiley.
- National Research Council Committee on Successful Out-of-School STEM Learning (Member of authorship committee) (2015). Successful out-of-school STEM learning: Identifying and supporting successful settings and programs. Washington, D.C.: National Academy Press.
- Liben, L. S., & Bigler, R. S. (Eds.) (2014). *The role of gender in educational contexts and outcomes.*Volume 47 of *Advances in child development and behavior.* Series Editor: J. B. Benson. San Diego: Elsevier.
- Blakemore, J. E. O., Berenbaum, S. A., & Liben, L. S. (2009). *Gender development*. New York: Taylor & Francis.
- Liben, L. S. (Ed.) (2009). Current directions in developmental psychology. Boston: Pearson.
- National Research Council Committee on the Support for Thinking Spatially (Member of authorship committee) (2006). *Learning to think spatially: GIS as a support system in the K-12 curriculum.* Washington, D.C.: National Academy Press.
- Liben, L. S., & Bigler, R. S. (2002). The developmental course of gender differentiation: Conceptualizing, measuring, and evaluating constructs and pathways. *Monographs of the Society for Research in Child Development, Serial No. 269, Vol 6.*
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- Liben, L. S., Patterson, A. H., & Newcombe, N. (Eds.). (1981). *Spatial representation and behavior across the life span: Theory and application*. New York: Academic Press.
- Liben, L. S. (Ed.). (1978). Deaf children: Developmental perspectives. New York: Academic Press.

#### **SELECTED INVITED ADDRESSES: 2010-2023**

- Liben, L. S. (2023, October). Why the study of human development matters for real-world interventions. Presidential Address, Society for the Study of Human Development. Philadelphia, PA.
- Liben, L. S. (2023, June). Reflections: How serendipity, Piagetian Theory, and JPS led me to Madrid. Invited presentation at the 52nd Annual Meeting of the Jean Piaget Society. Madrid, Spain
- Liben, L. S. (2019, July) Developing an understanding of visualizations: Children's strengths and struggles. Keynote address at the Gordon Research Conference: Educating Skillful Visualizers, Lewiston, ME
- Liben, L. S. (2019, February). Understanding & facilitating spatial thinking: A cognitive-developmental approach. STEM Education Research Centre, The University of Canberra, Canberra Australia.
- Liben, L. S. & Bigler, R. S. (2019, February). Understanding and undermining the development of gender dichotomies: The legacy of Sandra Lipsitz Bem. Invited presentation in the Distinguished Publication Award Symposium, Association for Women in Psychology. Newport Beach, RI.
- Liben, L. S. (2018, December) The STEM Gender Gap: In and Beyond the National Geographic Bee. Invited presentation at the National Geographic Society (Education Program), Washington, D.C.
- Liben, L. S. (2018, March) Where are the women? Causes and solutions for women's under representation in science and engineering. Part I: Origins and implications. Invited address to the Institute for Advanced Studies, University of Bologna, Bologna, Italy

- Liben, L. S. (2017, October). Beyond gender determinism. Keynote Address, *Children and Authenticity: Exploring the Heart of Education*, Children's Art Guild, Inc., New York, NY.
- Liben, L. S. (2016, November). You've come a long way, baby! *A developmental psychologist's view of gender*. Invited colloquium, Population Research Center, University of Texas, Austin, TX
- Liben, L. S. (2016, October). "We've come a long way, baby!" Asking what gender was, is, and might be. Keynote Address, Gender Development Research Conference, San Francisco, CA.
- Liben, L. S. (2016, June). Developing an understanding of real and represented spaces. Plenary Address, annual meeting of the Jean Piaget Society, Chicago, IL.
- Liben, L. S. (2016, May). Gender past, present, & future: A developmental psychologist's perspective Invited colloquium, Carleton College. Northfield, MN.
- Liben, L. S. (2016, April). Single-sex schooling: The good, the bad, & the who knows? What gender science brings to the debate. Invited campus-community lecture, Beloit College. Beloit, WI.
- Liben, L. S. (2016, April). Children's developing understanding of images: The role of parents, schools, & museums. Invited colloquium, Museum Program, Beloit College. Beloit, WI.
- Liben, L. S. (2015, March). We've come a long way baby! (But we're not there yet.) Presidential Address, Biennial Meeting of the Society for Research in Child Development, Philadelphia, PA.
- Liben, L. S. (2014, July). Gender, spatial thinking, & STEM in formal & informal educational contexts. Keynote Address, Gender and STEM Conference, Berlin.
- Liben, L. S. (2014, June). Gender, spatial thinking, & STEM in formal & informal educational contexts. Invited presentation at the National Summit on Successful OST STEM Learning. National Academy of Sciences, Washington D.C.
- Liben, L. S. (2013, November). Individual ↔ context relations in developmental intergroup theory: Explaining and optimizing social-group relationships. Keynote Address, Biennial Meeting of the Society for the Study of Human Development, Fort Lauderdale, FL.
- Liben, L. S. (2013, June). Children's gendered beliefs and actions: Yes, words *do* matter! Keynote Address, European Training Network Conference on Language, Cognition and Gender, University of Bern, Bern Switzerland.
- Liben, L. S. (2013, February). Spatial concepts as foundations for educational, occupational, and daily tasks. Invited colloquium, Department of Psychology, University of Pennsylvania, Philadelphia.
- Liben, L. S., (2012, March) Spatial cognition as a foundation for representational competence. Keynote Address, Eastern Psychological Association, Pittsburgh, PA.
- Liben, L. S. (2012, December). The role of spatial skills in mapping skills. Invited colloquium, Department of Geography, University of Zurich, Zurich Switzerland.
- Liben, L. S. (2012, December). Spatial education across the college curriculum: A psychologist's perspective. Invited plenary speaker, Specialist meeting on spatial thinking across the college curriculum. Santa Barbara.
- Liben, L. S. & Downs, R. M. (2012, September). Understanding Competitions: Where are the GeoBee girls? Invited presentation at meeting of academic competitions directors' meeting, National Geographic Society, Washington, DC.
- Liben, L. S. (2012, June). From the lab to the real world: What is lost and what is found? Invited speaker, Realism to Relevance: An Ecological Approach to Perception, Action, and Cognition, Festschrift to Honor Herbert L. Pick, Jr. Minneapolis.
- Liben, L. S. (2012, February). Parental input into children's spatial skills. Invited colloquium, Center for Research on Culture, Development, and Education. New York University, New York.
- Liben, L. S., (2011, November). Understanding geospatial representations: A cognitive developmental approach. Invited presentation in Human Factors in GIScience: Transdisciplinary mini-lecture series. Department of Geography, The Pennsylvania State University, University Park, PA.
- Liben, L. S. (2011, June). The landscape of spatial thinking. Invited presentation at Geographic Thinking Workshop, The Roadmap to Geographic Education, National Geographic Society, Washington, D.C.
- Liben, L. S. (2011, May). From universality to individuality in gender development: Evolving perspectives, methods, and applications. Invited presentation, Festschrift to honor Aletha C. Huston, Austin TX.
- Liben, L. S. (2010, September). Cognitive development as a foundation for understanding geospatial representations. Keynote Address, GIScience. Zurich, Switzerland.
- Liben, L. S. (2010, March). Why sex matters: Biological, cognitive, and social processes in gender development. Psychology Department Colloquium Villanova University, Villanova, PA.

Liben, L. S. (2010, February). Developmental pathways to map understanding. Invited colloquium, Psychology Department, Tulane University, New Orleans, LA.

#### **CONFERENCE PRESENTATIONS: 2010-2023**

- Shi, Y, Lui, G., Liben, L. S., Chen, Z, & Wong, W. I. (2023, October). Do students from single-sex and coeducational high schools differ in gender cognitions and do differences predict post-graduation outcomes? Findings from cross-lagged, propensity matched data. Poster presented at the biennial meetings of the Society for the Study of Human Development, Philadelphia
- Signorella, M. L., & Liben, L. S. (2023, October) Should I enter a STEM career? Weighing cognitive skills, job demands, spatial ability, and gender stereotypes. Poster presented at the biennial meetings of the Society for the Study of Human Development, Philadelphia
- Mannweiler, M. D., Bierman, K. L., & Liben, L. S. (2023, October). Implementing human-centered design methods to enhance preschool parent engagement in STEM play activities. Poster presented at the biennial meetings of the Society for the Study of Human Development, Philadelphia
- Bower, C. A. & Liben, L. S. (2023, October) Advancing students' spatial and STEM understanding: The moderating role of a teacher's gesture accuracy. Poster presented at the biennial meetings of the Society for the Study of Human Development, Philadelphia.
- Mannweiler, M. D., Bierman, K. L., & Liben, L. S. (2023, March). Impacts of primary caregiving on preschoolers' STEM skill development. Poster presented at the biennial meetings of the Society for Research in Child Development, Salt Lake City, Utah.
- Liben, L. S. (2021, April). *Monographs of the SRCD* and *Monograph Matters*. Invited presentation in the Wiley Meet the Editors Professional Development Session presented at the virtual biennial meetings of the Society for Research in Child Development.
- Schroeder, K. M., & Liben, L. S. (2021, April) Parents' sexism, homophobia, and religiosity attitudes in relation to children's gender typicality and felt pressure. Presentation in a paper symposium at the virtual biennial meetings of the Society for Research in Child Development.(Originally accepted for the 2020 SRCD Special Topics Meeting: Construction of the Other, Rio Grande, Puerto Rico. COVID postponed to SRCD biennial.)
- Liben, L. S. (2019, October). Research application and transfer. Invited panel presentation in the Digital Media & Cognitive Development preconference at the biennial meetings of the Cognitive Development Society, Louisville, KY.
- Hilliard, L. J. & Liben, L. S. (2019, October). Parental socialization about sexism: Do socialization beliefs match behavior? Symposium presentation at the biennial meeting of the Society for the Study of Human Development, Portland, OR.
- Schroeder, K. M., & Liben, L. S. (2019, October). Felt pressure to conform to gender roles in the context of general social conformity. Poster presented at the biennial meeting of the Society for the Study of Human Development, Portland, OR.
- Liben, L. S. (2019, March). Children's strategies for linking real-world maps to real-world environments. Symposium presentation at the biennial meetings of the Society for Research in Child Development, Baltimore, MD.
- Liben, L. S. (2019, March). The pros and cons of studying and intervening in social-group intellectual stereotypes. Symposium presentation at the biennial meetings of the Society for Research in Child Development, Baltimore, MD.
- Schroeder, K. M. & Liben, L. S. (2019, March) The impacts of felt pressure, age, and gender on responses to sexism. Poster presented at the biennial meetings of the Society for Research in Child Development, Baltimore, MD.
- Hilliard, L. J. & Liben, L. S. (2018, October). Testing a #MeToo effect on adults' socialization beliefs. Poster presented at the Gender Development Research Conference, San Francisco, CA.
- Liben, L. S. & Signorella, M. L. (2018, October). Ameliorating the STEM gender gap through a spatial intervention? Not so fast! Poster presented at the Gender Development Research Conference, San Francisco, CA.
- Signorella, M. L. & Liben, L. S. (2018, October). What can students' job perceptions tell us about gender and STEM? Poster presented at the Gender Development Research Conference, San Francisco, CA.

- Schroeder, K. M. & Liben, L. S. (2018, October). Adults' and children's approaches to explaining gender concepts. Poster presented at the Gender Development Research Conference, San Francisco, CA.
- Coyle, E. F. & Liben, L. S. (2018, August). Closing the gender gap in STEM: A meta-analysis of what works (and what does not). Symposium presentation at the meetings of the Gender & STEM Network, Eugene, OR.
- Liben, L. S. (2018, August). STEM motivation & participation: some reflections. Symposium presentation at the meetings of the Gender & STEM Network, Eugene, OR.
- Signorella, M. L. & Liben, L. S. (2018, August). What can students' job perceptions tell us about gender and STEM? Poster presented at the meetings of the American Psychological Association, San Francisco, CA.
- Suh, D. D., Ribner, A. D., Liben, L. S., & Tamis-Lemonda, C. S. (2018, July). Infants' fine-motor skills predict children's spatial skill performance at age 5. Poster presented at the International Conference for Infant Studies. Philadelphia. PA.
- Liben, L. S., & Bower, C. A. (2018, May). Strategies in linking surrounding places to spatial representations. Symposium presentation at the annual meetings of the Jean Piaget Society, Amsterdam.
- Liben, L. S., Hilliard, L. J., & Bigler, R. S. (2017, October). Social-group divisions in classrooms: Effects on individual children and the broader ecology. Symposium presentation at the biennial meeting of the Society for the Study of Human Development. Providence, RI.
- Hilliard, L. J. & Liben, L. S. 2017, October). Adults' beliefs about how to socialize children about social-group biases. Symposium presentation at the biennial meeting of the Society for the Study of Human Development. Providence, RI.
- Schroeder, K. M., & Liben, L. S. (2017, October). A mixed-methods approach to understanding developmental trends in metacognitions of gender. Poster presented at the biennial meeting of the Society for the Study of Human Development. Providence, RI.
- Schaefer, C. A., Liben, L. S., Schroeder, K. M., Pasterski, V., Glover, V., Hindmarsh, P., Neufeld, S., O'Connor, T., Spencer, D., & Hines, M. (2017, April). Does prenatal testosterone predict children's changing interests in gender differentiated activities? Poster presented at the biennial meeting of the Society for Research in Child Development. Austin, TX.
- Schroeder, K. M., & Liben, L. S. (2017, April). Does understanding of gender link to felt pressure to conform to gender roles? Poster presented at the biennial meeting of the Society for Research in Child Development. Austin, TX.
- Borriello, G. A., & Liben, L. S. (2017, April). Guiding knowledge by guiding hands: Can we increase maternal gesture during spatial play with preschoolers? Symposium presentation at the biennial meeting of the Society for Research in Child Development. Austin, TX.
- Liben, L. S., Signorella, M. S., & Bower, C. A. (2017, April). Effects of a spatial-skills curriculum on STEM outcomes in middle-school students. Symposium presentation at the biennial meeting of the Society for Research in Child Development. Austin, TX.
- Bower, C. A., & Liben, L. S. (2017, April). A spatial perspective-taking intervention facilitates children's understanding of astronomy. Symposium presentation at the biennial meeting of the Society for Research in Child Development. Austin, TX.
- Schroeder, K. M., & Liben, L. S. (2016, October). What does gender really mean? Developmental trends in metacognitions of gender. Poster presented at the Gender Development Research Conference, San Francisco, CA.
- Borriello, G. A., Liben, L. S., & Buss, K. A. (2016, June). Does parent or child gender impact dyads' spatial behavior during play? Symposium presentation at the annual meeting of the Jean Piaget Society, Chicago, IL.
- Bower, C. A., Liben, L. S., & Christensen, A. E. (2016, June). Children's map use in environmental space: Does suggesting map alignment help? Paper presented at the annual meeting of the Jean Piaget Society, Chicago, IL.
- Bower, C. A., Liben, L. S., & Plummer, J. D. (2016, June). The role of spatial skills and gesture in understanding and communicating scientific concepts: A focus on astronomy & geology. Symposium presentation at the annual meeting of the Jean Piaget Society, Chicago, IL.

- Signorella, M. S., Liben, L. S. (2016, March). Self-conceptions and spatial performance by women and men in STEM- or non-STEM-intensive majors. Paper presented at the meeting of the Association for Women in Psychology, Pittsburgh, PA.
- Signorella, M. S., Liben, L. S., Sorby, S. A., & Veurink, N. L. (2016, March). Early adolescent self-conceptions and beliefs in gender-related domains: A longitudinal comparison. Paper presented at the biennial meeting of the Society for Research in Adolescence. Baltimore, MD.
- Coyle, E. F. & Liben, L. S. (2016, March). What works to close the gender gap in STEM? A meta-analysis of interventions. Poster presented at the biennial meeting of the Society for Research in Adolescence. Baltimore, MD.
- Bower, C. A., Liben, L. S., Christensen, A. E., & Kastens, K. A. (2015, October). Multiple modes of representation in communicating scientific concepts in developing learners: The role of spatial skills and gesture. Poster presented at the meeting of the Cognitive Development Society, Columbus, OH.
- Borriello, G. A., Liben, L. S., & Buss, K. A. (2015, October). Does spatial talk during parent-child play vary by parent or child gender? Poster presented at the meeting of the Cognitive Development Society, Columbus, OH.
- Coyle, E. F. & Liben, L. S. (2015, March). Preschoolers' mechanical learning from a STEM toy: The roles of parental guidance and gender-targeted marketing. Poster presented at the biennial meeting of Society for Research in Child Development, Philadelphia, PA.
- Coyle, E. F. & Liben, L. S. (2015, March). Toys marketed to girls: A path to STEM engagement? In E. Weisgram (Chair), Gender-typing of toys: Causes, correlates, and consequences. Symposium presentation at the biennial meeting of the Society for Research in Child Development, Philadelphia, PA.
- Bower, C. A., Plummer, J. D., & Liben, L. S. (2015, March). The role of spatial perspective-taking skills in children's gesture use and explanations of astronomical phenomena. Poster presented at the biennial meeting of the Society for Research in Child Development. Philadelphia, PA.
- Borriello, G. A., & Liben, L. S. (2015, March). Parental guidance of children's spatial thinking: effects of an intervention. Poster presented at the biennial meeting of the Society for Research in Child Development. Philadelphia, PA.
- Coyle, E. F. & Liben, L. S. (2014, October). The influence of gender-based marketing on parent-child play with a mechanical toy. Poster presented at the Gender Development Research Conference, San Francisco, CA.
- Liben, L. S. (2014, October). Academic and school success: Research on gendered interventions.

  Symposium presentation at the Gender Development Research Conference, San Francisco, CA.
- Coyle, E. F. & Liben, L. S. (2014, July). The earliest STEM learning: The influences of parents and gender-based marketing on preschoolers' play with a construction toy. Poster presented at the Gender and STEM Conference, Berlin.
- Bower, C. A., Plummer, J. D., & Liben, L. S. (2014, May). The role of perspective-taking skills and gesture in connecting astronomical frames of reference. Paper presented at the 1st PA Spatial Cognition Symposium. Pennsylvania State University, PA.
- Borriello, G. A., & Liben, L. S. (2014, May). Mothers' responsiveness to instructions to facilitate preschoolers' spatial thinking during play. Symposium presentation at the 1<sup>st</sup> PA Spatial Cognition Symposium. University Park, PA.
- Bower, C. A., Plummer, J. D., & Liben, L. S. (2014, March). The role of perspective taking skills in children's explanations of astronomical phenomena. Paper presented at the National Association for Research in Science Teaching Annual International Conference, Pittsburgh, PA.
- Sorby, S. A., Signorella, M. L., Veurink, N. L., & Liben, L. S. (2013, October). Developing spatial skills among middle school students. Paper presented at Engineering Design Graphics Division of the American Society for Engineering Education: 68th Annual Midyear Conference, Worcester, MA. (68th Midyear EDGD Conference Proceedings pp. 23-27).
- Liben, L. S., (2013, June). Contemporary perspectives on gender development: A constructivist view of children's gendered beliefs and actions. Invited symposium presentation at the annual meeting of the Jean Piaget Society, Chicago.
- Liben, L. S., (2013, May). Replications in developmental science: Critical challenges for building cumulative psychological science of child development. Invited panel presentation at the annual meeting of the Association of Psychological Science, Washington, D. C.

- Bigler, R. S., Hayes, A. R., & Liben, L. S. (2013, April). When, why, and how the gender composition of classrooms affects students. Invited symposium presentation at the biennial meeting of the Society for Research in Child Development, Seattle.
- Bower, C. A., Plummer, J. D., Liben, L. S., & Small, K. (2013, April). The role of perspective-taking skills in children's learning of astronomical phenomena. Poster presented at the biennial meeting of the Society for Research in Child Development. Seattle, WA.
- Liben, L. S., Signorella, M. L., & Sorby, S. A. (2013, April). The impact of a spatial skills curriculum in middle school: Cognitive and social-cognitive outcomes in spatial and STEM domains. Symposium presentation at the biennial meeting of the Society for Research in Child Development, Seattle.
- Liben, L. S. (2013, April). The development of social stereotypes and prejudice: Making intractable questions tractable through the novel-groups paradigm. Symposium presentation at the biennial meeting of the Society for Research in Child Development, Seattle.
- Borriello, G. & Liben, L. S. (2013, April). Parental supports for the development of preschoolers' spatial skills through play. Poster presented at the biennial meeting of the Society for Research in Child Development, Seattle.
- Coyle, E. F. & Liben, L. S. (2013, April). Attracting girls to STEM: Personal gender salience moderates the outcome of an occupational game. Poster presented at the biennial meeting of the Society for Research in Child Development, Seattle.
- Bigler, R. S. & Liben, L. S. (2012, April). Reducing sexism in schools: Is single-sex schooling a solution? Symposium presentation at the meeting of the American Educational Research Association, Vancouver.
- Liben, L. S. & Bigler, R. S. (2012, April). If, when, why, and how to address gender in the classroom. Presentation in the Vice-Presidential Symposium at the meeting of the American Educational Research Association, Vancouver.
- Liben, L. S. (2012, April). Making STEM girly or making girls STEMy? In Gender, Motivation, and Performance Symposium (H. Watt, Chair) at the Gender Development Research Conference, San Francisco.
- Coyle, E. F., & Liben, L. S. (2012, April). Piquing preschool girls' occupational interests: What matters? Poster presented at the Gender Development Research Conference, San Francisco.
- Hilliard, L. J., & Liben, L. S. (2012, April). No boys in ballet! Response to gender bias in mother-child conversations. Poster presented at the Gender Development Research Conference, San Francisco.
- Liben, L. S., Bower, C. A., Christensen, A. E., & Myers, L. J. (2012, February). Children's success in mapping locations in relation to spatial skills, strategies, and gender. Paper presented at the Annual Meeting of the Association of American Geographers, New York.
- Li, R., Klippel, A., Liben, L. S., & Christensen, A. E. (2012, February). Indoor spatial awareness: Impacts of environmental quality, individual differences, and mobility. Paper presented at the Annual Meeting of the Association of American Geographers, New York.
- Hilliard, L. J., & Liben, L. S. (2011, August). Beliefs and practice: Addressing bias with children.

  Presentation in symposium *Parenting in and about diverse contexts*). American Psychological Association, Washington, D.C.
- Liben, L. S., (2011, June). Parental supports in informal learning environments: Developing children's scientific concepts and skills. Symposium presentation at the annual meeting of the Jean Piaget Society, Berkeley, CA.
- Christensen, A. E., & Liben, L. S. (2011, April). Not all map use is created equal: Effects of task demands on children's environmental learning. Poster presented at the biennial meeting of the Society for Research in Child Development. Montreal, Canada.
- Liben, L. S. & Myers, L. J. (2011, April). Stickers mark the spot! Success in mapping campus locations in relation to children's spatial skills, strategy use, and sex. Poster presented at the biennial meeting of the Society for Research in Child Development. Montreal, Canada.
- Liben, L. S. (2011, April). The challenge of linking environmental photographs and maps. Paper presented at the Annual Meeting of the Association of American Geographers. Seattle, WA.
- Liben, L. S. (2011, March). The great beyond: Expanding children's and researchers' notions of symbolic development. Symposium presentation at the biennial meeting of the Society for Research in Child Development. Montreal, Canada.

- Liben, L. S. (2010, October). The National Geographic Bee: Where are the girls? Symposium presentation at the National Council for Geographic Education. Savannah. Georgia.
- Christensen, A. E. & Liben, L. S. (2010, September). The role of map alignment in performance on mapping tasks. In D. N. Rapp (Ed.), *Spatial Cognition 2010: Poster presentations*. SFB/TR 8 Report No. 024-07/2010,18, Universities of Bremen and Freiburg, Germany.
- Münzer, S., Christensen, A. E. & Liben, L. S. (2010, September). Finding your way around the environment: Differences and similarities across countries in self-reports. In D. N. Rapp (Ed.), *Spatial Cognition 2010: Poster presentations*. SFB/TR 8 Report No. 024-07/2010, 66. Universities of Bremen and Freiburg, Germany.
- Bigler, R. S. & Liben, L. S. (2010, July). Socialization of children's knowledge and views of intergroup bias. Paper presented at the Small Group Meeting: Lisbon University Institute; Developmental Perspectives on Intergroup Prejudice: Advances in Theory, Measurement, and Intervention. Lisbon, Portugal.
- Liben, L. S. (2010, May). Developing spatial skills: The 3Rs of individual and environmental differences. Invited presentation at the Spatial Learning Conference: Sources of Individual Differences in Spatial Skills. Cambridge, MA.
- Liben, L. S., & Hilliard, L. J. (2010, April). Preschoolers' gender vigilance: Effects of classroom organization. Poster presented at the Gender Development Research Conference, San Francisco, CA.
- Liben, L. S., Pasterski, V. L., Glover, V., Hilliard, L. J., Hindmarsh, P. C., Neufeld, S. A., O'Connor, T. G., Spencer, D., & Hines, M. (2010, April). Prenatal testosterone exposure and children's later self-endorsements of gender-differentiated activities and traits. Poster presented at the Gender Development Research Conference, San Francisco, CA.
- Hilliard, L. J., & Liben, L. S. (2010, April). Addressing discrimination with children: Young adults' past experiences and current beliefs. Poster presented at the Gender Development Research Conference, San Francisco, CA.
- Liben, L. S. (2010, April). Spatial sex differences in infancy: What are they and what do they mean? In M. Hines (Chair), Sex differences in infants. Symposium presentation at the Gender Development Research Conference, San Francisco, CA.
- Liben, L. S. (2010, April). Single sex schools: Out of the pan and into the fire. In. M. L. Signorella (Chair), Single sex schools: Debates, data, and decision-making. Symposium presentation at the Gender Development Research Conference, San Francisco, CA.
- Hilliard, L. J., & Liben, L. S. (2010, April). Teaching children about racism and sexism: When? How? Ever? Poster presented at the Center for Research in Diverse Contexts 10<sup>th</sup> Anniversary Celebration, Penn State, University Park, PA.
- Liben, L. S., Christensen, A. E., Kastens, K. A., (2010, March). Spatial concepts, expertise, and context effects on the use of gesture in geoscience. Poster presented at REESE Principal Investigators Meeting, Arlington, VA.