

MARTHA CECILIA BOTTIA
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Education

Date	Major	Degree
Fall 2005 to Spring 2010, University of North Carolina at Charlotte	Public Policy	Ph.D.
Spring 2005 to Winter 2006, University of North Carolina at Charlotte	Sociology	M.A.
January 2002 to December 2002, Los Andes University, Bogota, Colombia	Environmental Economics and Natural Resources	M.A.
January 2001 to December 2002, Los Andes University, Bogota Colombia	Economics	M.A.
August 1996 to December 2000, Los Andes University, Bogota Colombia	Economics	B.A.

Professional Positions

University of North Carolina at Charlotte, Charlotte, NC Research Assistant Professor	07/11-Present
University of North Carolina at Charlotte, Charlotte, NC Postdoctoral Research Fellow- Sociology Department	07/10- 06/11
University of North Carolina at Charlotte, Charlotte, NC Graduate Research Assistant- Sociology Department	10/05-06/10
ABT Associates, Charlotte, NC Bilingual Interviewer	03/08-04/08
University of North Carolina at Charlotte, Charlotte, NC Graduate Research Assistant- Social Work Department	08/05-10/05
National Planning Department, Bogota, Colombia Advisor - Social Development Division	10/03-01/05
Government's Corporates Superintendence, Bogota, Colombia Economic Advisor	03/03-07/03
Center of Studies for Economic Development (CEDE), Bogota, Colombia Research Assistant-Los Andes University	03/00-03/03
Economic Commission for Latin American and the Caribbean (CEPAL) Research Assistant	06/01-07/01

Grants

National Science Foundation 2015-2017 \$260,480
 A Synthesis of Social Science Research About
 the Relationship of K-12 Race, SES, and Immigrant
 Status School Diversity to Two- and Four-Year
 College STEM Outcomes,"
 Roslyn A. Mickelson (PI) & **Martha C. Bottia** (Co-PI)

Publications

- Bottia, M.C.**, Mickelson, R., Giersch, J., Stearns, E., & Moller, S. (2017). "The Role of High School Racial Composition and Opportunities to Learn in Students' STEM College Participation," *Journal of Research in Science Teaching*, Forthcoming.
- Bottia, M.C.**, Stearns, E., Mickelson, R. & Moller, S. (2017). "Boosting the Numbers of STEM Majors? The Role of High Schools with a STEM Program" *Science Education*, Forthcoming.
- Bottia, M.C.**, Valentino, L., Moller, S., Mickelson, R. & Stearns, E. (2016). "Teacher Collaboration and Latinos' Mathematics Achievement Trajectories" *American Journal of Education*, 122(4), 505-535.
- Mickelson, R. A., **Bottia, M. C.**, Larimore, S., & Lambert, R. (2016). The Effects of School Composition on K–12 Reading and Math Achievement. School Integration Matters: Research-Based Strategies to Advance Equity, 56.
- Giersch, J., **Bottia, M. C.**, Mickelson, R. A. & Stearns, E. (2016) "Exposure to School and Classroom Racial Segregation in Charlotte-Mecklenburg High Schools and Students' College Achievement?" *Education Policy Analysis Archives*, 24 (32) from <http://epaa.asu.edu/ojs/article/view/2123>
- Bottia, M.C.**, Mickelson, R. Giersch, J., Stearns, E. & Moller, S. (2016) "Distributive Justice Antecedents of Race and Gender Disparities in First Year College Performance," *Social Justice Research*, 1-28.
- Stearns, E., **Bottia, M.C.**, Davalos, E., Mickelson, R., Moller, S. & Valentino, L. (2016). "Demographic Characteristics of High School Math and Science Teachers and Girls' Success in STEM," *Social Problems*, 63(1), 87-110.
- Mickelson, R. A., **Bottia, M.C.**, Larimore, S., & Lambert, R. (2015). "Does School Racial Composition Matter for Achievement: Findings from Metaregression Analyses of the Effects of School Racial and Ethnic Composition on K-12 Reading and Mathematics Test Scores Since 1990." In Erica Frankenberg, (Ed). Education and Civil Rights: Obstacles and Opportunities for Supporting Racial Diversity and Equity across the Educational Pipeline (in preparation).
- Bottia, M.C.**, Stearns, E., Mickelson, R., Moller, S., & Valentino, L.(2015). "Growing the Roots of STEM Majors: Female Math and Science High School Faculty and the Participation of Students in STEM," *Economics of Education Review*, 45:14-27.

- Bottia, M.C.**, Stearns, E., Mickelson, R., Moller, S., & Parker, A.D. (2015). “The Relationships Among High School STEM Learning Experiences and Students’ Intent to Declare and Declaration of a STEM Major in College” *Teachers College Record*, 117 (4), pp.1-46.
- Bottia, M.C.**, Moller, S., Mickelson, R., Stearns, E. (2014). “Foundations of Mathematics Achievement: Instructional Practices and Diverse Kindergarten Students,” *Elementary School Journal*, 115 (1), 124-150.
- Moller, S. Banerjee, N., **Bottia, M.C.**, Stearns, E., Mickelson, R., Dancy, M., Wright, E. & Valentino, L. (2014). “Moving Latino/a Students Into STEM Majors in College: The Role of Teachers and Professional Communities in Secondary Schools,” *Journal of Hispanic Higher Education*, 14 (1), 3-33.
- Moller, S., Stearns, E. Mickelson, R., **Bottia, M.C.**, & Banerjee, N. (2014). “Is Academic Engagement the Panacea for Achievement in Mathematics across Racial/Ethnic Groups? Assessing the Role of Teacher Culture,” *Social Forces*, Vol. 92(4): 1513-1544.
- Mickelson, R., **Bottia, M.C.**, & Lambert, R. (2013). “A Meta-Regression Analysis of the Effects of School and Classroom Composition on Mathematics Outcomes,” *Review of Educational Research*, Vol. 83: 121 - 158.
- Moller, S., Mickelson, R., Stearns, E., Banerjee, N. & **Bottia, M.C.** (2013). “Collective Pedagogical Teacher Culture and Mathematics Achievement: Differences by Race, Ethnicity and Socio-Economic Status” *Sociology of Education*. 86(2): 174-194.
- Kuhns, J.B., Exum, M.L., Clodfelter, T.A. & **Bottia, M.C.** (2013). “A Meta-analysis of the Alcohol and Intoxication Status of Homicide Offenders”. *Homicide Studies*, 18(3): 251–270.
- Bottia, M.C.**, Cardona Sosa, L. & Medina, C.A. (2012). “El SISBEN como mecanismo de focalización individual del régimen subsidiado en salud en Colombia: ventajas y limitaciones”, *Revista de Economía del Rosario*, Vol. 15(2): 137-177.
- Mickelson, R. & **Bottia, M.C.** (2010). “Integrated Education and Mathematics Outcomes: A Synthesis of Social Science Research”, *North Carolina Law Review*, 88(3):993-1090.
- Tegeler, P., Mickelson, R. & **Bottia, M.C.** (2010). “The Impact of School Integration on College Attendance and Poverty Reduction”, available at <http://www.spotlightonpoverty.org/ExclusiveCommentary.aspx?id=5cd06dda-6a5f-4c22-939d-d65574151c25>
- Mickelson, R. A., **Bottia, M.C.**, & Southworth, S. (2012). “School Choice and Segregation by Race, Class, and Ability” in W. Mathis, Gary Miron and Kevin Welner (eds). *School Choice: The Evidence, Politics, and Policies for the 21st Century*. NY: Routledge.
- Bottia, M.C.** & Mickelson, R. (2008) “Desegregation.” In Encyclopedia of African American Experience Kofi Lometey (Ed). Newbury Park, CA: SAGE.

Bottia, M.C., Cardona, L. & Medina, C. (2008)"Bondades y Limitaciones de la Focalización con Proxy Means Tests: El Caso Sisben en Colombia (Strengths and Limitations of the Focalization with Proxy Means Tests: The Case of the Sisben in Colombia)," *Borradores de Economía 005185*, Banco de la Republica de Colombia.

Bottia, M.C. (2003). "La presencia y Expansión Municipal de las FARC: es Avaricia y Contagio, más que Ausencia Estatal (Municipal FARC's presence and expansion: is more greed and diffusion, that lack of State's presence)", *Documentos CEDE 03*, Universidad de Los Andes.

Working Papers

R & R Stearns, E., **Bottia, M.C.**, Jha, N., Mickelson, R., Moller, S. & Giersh, J. "Do Relative Advantages in STEM vs. Non-STEM Grades Explain the Gender Gap in Selection of a STEM Major in College?" [*Sociology of Education*]

R & R Mickelson, R, **Bottia, M.C.**, & Larimore, S. "A Metaregression Analysis of the Effects of School Racial and Ethnic Composition on K-12 Reading, Language Arts, and English Outcomes" [*Educational Research Review*]

In **Bottia, M.C.**, Stearns, E., Mickelson, R., Moller, S. & Valentino, L. "Latinos/as' Roots **Progress** of STEM in North Carolina"

In **Bottia, M.C.**, Stearns, E. Mickelson, R. Moller, S. & Kennedy, Y. "Who are the Women **Progress** Who Persist in STEM? Evidence from North Carolina"

In **Bottia, M.C.**, Mickelson, R., Stearns, E., Moller, S. & Jamil, C. "What Does Community Colleges Have to Do with Underprivileged Students' STEM Participation"

In **Bottia, M.C.**, Mickelson, R. & Jamil, C. "High School Contextual Characteristics and **Progress** Students' College STEM Participation: A Review of Social Science Research"

In Mickelson, R., **Bottia, M.C.** & Larimore, S. "Integrated Education and Science Outcomes: **Progress** A Synthesis of Social Science Research".

In **Bottia, M.C.** & Fitzgerald, S. "The FARC and Violence against Civilians in Colombia: A **Progress** Case of Tactical Interaction?"

Paper Presented at Conference

2017 "A Literature Review on Why Diverse Students are Interested In, Choose, and Persist in College STEM Outcomes" Presented at the American Sociological Meeting, Montreal, August, with Roslyn Mickelson, Cayce Jamil & Leanne Barry.

2017 "What Does Community Colleges Have to Do with Underprivileged Students' STEM Participation?" Presented at the Meeting of the American Education Research Association, San Antonio, Texas, with Roslyn Mickelson, Elizabeth Stearns, Stephanie Moller and Cayce Jamil.

- 2016** “High School Contextual Characteristics and Students’ College STEM: A Review of Social Science Research” Presented at the American Sociological Association Meeting, Seattle, August, with Roslyn Mickelson and Cayce Jamil.
- 2016** “The Role of Two-Year Colleges in Students’ Four-Year College STEM Participation” Presented at the Association for Public Policy Analysis and Management (APPAM) International Conference, London, June, with Roslyn Mickelson, Elizabeth Stearns, Stephanie Moller and Cayce Jamil.
- 2016** “Who are the Women Who Persist in STEM? Evidence from North Carolina” Presented at the Association for Women in Science Meeting, Baltimore, May, with Elizabeth Stearns, Roslyn Mickelson, Stephanie Moller and Yolanda Kennedy.
- 2016** “A Permeable Pipeline? Gender and the Processes of Joining and Persisting in STEM Majors in College” Presented at the Southern Sociological Society Meeting, Atlanta, April, with Elizabeth Stearns, Nandan Jha, Roslyn Mickelson, and Stephanie Moller.
- 2015** "Procedural and Distributive Justice Antecedents of Race, Socioeconomic, and Gender Disparities in First-Year College Grades" Presented at the Meeting of the American Education Research Association, Chicago, March, with Roslyn Mickelson, Elizabeth Stearns, Jason Giersch and Stephanie Moller.
- 2015** "High Schools with a STEM Focused Program and Students' STEM Outcomes in North Carolina " Presented at the Meeting of the Sociology of Education Association, Asilomar, California, February, with Elizabeth Stearns, Roslyn Mickelson, and Stephanie Moller.
- 2014** "Race and Gender and Leaving STEM: Preliminary Results of The Roots of STEM Project " Presented at the Physics Education Research Conference (PERC 2014), Minneapolis, Minnesota, July, with Melissa Dancy, Elizabeth Stearns, Roslyn Mickelson, and Stephanie Moller.
- 2014** “A Meta-Regression Analysis of the Effects of School and Classroom Composition on Reading/Language Outcomes” Presented at the ISA World Congress of Sociology, Yokohama, Japan, July, with Roslyn Mickelson and Savannah Larimore.
- 2014** “Effects of Segregated Schooling on Academic Achievement, “ Presented at the American Educational Research Association Meeting, Philadelphia, Pennsylvania, April, with Jason Giersch.
- 2014** “Effects of Segregated Schooling on College Academic Achievement Among CMS Graduates,” Presented at the Southern Sociological Society Annual Conference, Charlotte, NC, with Jason Giersch, Roslyn Mickelson, and Elizabeth Stearns.
- 2014** “Latino/a Students and the STEM Pathway: Evidence from North Carolina,” Presented at the Southern Sociological Society Conference, Charlotte, NC, with Lauren Valentino.
- 2013** “Do Preparation and Inspiration During High School Increase the Likelihood of Pursuing a STEM Degree?,” *Presented at the NARST (National Association for Research in Science Teaching)*

- Annual International Conference*, Rio Grande, Puerto Rico, April, with Elizabeth Stearns, Roslyn Mickelson, Stephanie Moller, and Ashley Parker.
- 2012** “Teacher Collaboration and Mathematics Achievement Trajectories of Latino Students,” Presented at the American Sociological Association Meeting, Denver, CO.
- 2012** “Does School Racial and SES Composition Affect K-12 Science Achievement? A Mixed Method Synthesis of Social Science Research,” Paper presented at the American Sociological Association Meeting, Denver, CO.
- 2012** "A Meta-Analysis of Alcohol Use and Intoxication Rate Study Findings among Homicide Offenders" *Paper presented at the annual meeting of the ASC Annual Meeting*, Palmer House Hilton, Chicago, IL, Nov, with Joe Kuhns, Lynn Exum, and Tamatha A. Clodfelter.
- 2012** “Collaborative Professional Teacher Communities, Reform Curriculum, and Mathematics Achievement in Elementary School.” Paper presented at the Annual Meetings of Sociology of Education Association, Pacific Grove, California, with Stephanie Moller, Elizabeth Stearns, and Rolsyn Arlin Mickelson.
- 2012** “Determining Female Success in STEM: High School Role Models and the Gender Gap in STEM” *Paper presented at Southern Sociological Meeting*, New Orleans, Louisiana, April, with Elizabeth Stearns, Roslyn Mickelson, Stephanie Moller and Lauren Valentino.
- 2012** “A Meta-Analysis of the effects of School Composition on Mathematics Outcomes. ” *Paper presented at Southern Sociological Meeting*, New Orleans, Louisiana, April, with Roslyn Mickelson..
- 2011** “Ensuring Every Child Is in the Race To the Top: Mathematics Curricular Practices for Diverse Kindergarten Students” *Paper presented at Fall 2011 SREE research conference*, Washington, D.C., September with Stephanie Moller, Roslyn Mickelson, and Elizabeth Stearns.
- 2011** “The Race To The Top: Mathematics Curricular Practices for Diverse Kindergarten Students.” *Paper presented at American Sociological Association Meeting*, Las Vegas, Nevada, August, with Stephanie Moller, Roslyn Mickelson, and Elizabeth Stearns.
- 2010** "Math achievement by race, ethnicity, and SES: Examining the Importance of School Culture." *Paper presented at the AERA Grantee Conference Alexandria VA*, March, with Stephanie Moller, Roslyn Mickelson, and Elizabeth Stearns.
- 2010** “Collaborative, Student-Oriented, Professional Learning Communities and Mathematics Achievement: Differences by Race and Socio-Economic Status” *Paper presented at the American Sociological Association, Atlanta, GA, August 2010*, with Stephanie Moller, Roslyn Mickelson, and Elizabeth Stearns.
- 2010** “Drug Control Policies: The Cases of Colombia and the United States” *presented at the “Middle & Western China International Conference on Drug Issues”* Chongqing, China, June.

- 2010** “How Professional Communities Improve K-16 Curricula Mastery and Augments Mathematics Achievement.” *Paper presented at the Southern Sociological Association, Atlanta, GA, April, with Stephanie Moller, Roslyn Mickelson, and Elizabeth Stearns.*
- 2009** “Integrated Education and Mathematics Outcomes: A Synthesis of Social Science Research” *Paper presented at the Looking to the Future: Legal and Policy Options for Racially Integrated Education in the South and the Nation Conference, April 2, Chapel Hill, North Carolina, with Roslyn Mickelson.*
- 2007** "Why The A+ Plan is Failing: Race Matters for Florida’s Educational Outcomes". *Paper presented at the annual meeting of the American Sociological Association, New York, New York City, Aug, with Kathryn Borman, Roslyn Mickelson, Reginald Lee, Reginald, Will Tyson, Roslyn Mickelson, and Stephanie Southworth.*
- 2007** “The FARC and Violence against Civilians in Colombia: A Case of Tactical Interaction?” *Paper presented at the annual meeting of the Southern Sociological Society, Atlanta, Georgia, April.*
- 2002** “Determinantes de los Actores Armados Ilegales (Determinants of the Illegal Armed Actors)” *Paper presented at the Seminarios de Econometria, Departamento Nacional de Planeación, November 7.*

Teaching Experience

UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE	01/15-current
Sociological Research Methods	
UNIVERSIDAD DE LOS ANDES	
Crime, Armed Conflict and Drug Trafficking in Colombia	01/01-12/04
International Finance	08/01-12/01

Synergistic Activities

Spivack Archive searchable database that concern the effects of school and classroom ethnic, racial, and socioeconomic (SES) composition on specific outcomes. Available at <http://spivack.uncc.edu/>

Reviewer

American Educational Research Journal; Gender and Society; Teachers College Record; Sociology of Education; Educational Researcher, Review of Educational Researcher, Social Science Research, Science Education, Journal of Hispanic Education, Science Education, Journal of Research in Science Teaching.

Professional Associations

American Educational Research Association, American Sociological Association, Sociology of Education Association, Phi Beta Delta.

News Mentions

<https://www.csmonitor.com/EqualEd/2016/1117/Coding-at-the-homeless-shelter>

<https://www.usnews.com/news/articles/2015/03/09/is-the-teaching-profession-not-pink-enough>

Honors

- Recipient of the 2012 ICPSR Summer Program Workshop Analysis of Longitudinal Study of American Youth (LSAY) Data
- Second Place Annual Graduate Research Fair at UNCC 2007- Best Graduate Thesis Category VI: Interdisciplinary II with thesis “The FARC and Violence against Civilians in Colombia: A Case of Tactical Interaction?”
- Honorable mention 2006 “Crossing Borders” Writing Competition at UNCC with essay “How my international experience has affected my view of the world”.
- Mention of Honor Best MA in Economics Thesis 2003 (Special Recognition Juan Luis Londoño Award, Best Thesis of Master in Economics) with thesis “Municipal FARC’s Presence: is more greed and diffusion than State’s presence”
- Scholarship BID-CAF-UNIANDES 2002 to study Master in Environmental Economics and Natural Resources

Languages

- Spanish: Native
- English: Fluent
- French: Conversational

Skills

- STATA
- SAS
- SPSS
- HLM
- Geographic Information System (GIS) (ARCVIEW)