

**MARTHA CECILIA BOTTIA**

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**Summary:** Researcher and policy analyst with ample experience in database management, statistical analysis, metrics and management information, evaluation, and others. Strong in both, quantitative and qualitative methods, and also with the use of mixed methods.

**Education**

<b>Date</b>	<b>Major</b>	<b>Degree</b>
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.S.
January 2001 to December 2002, Los Andes University, Bogota Colombia	Economics	M.S.
August 1996 to December 2000, Los Andes University, Bogota Colombia	Economics	B.S.

**Professional Positions**

University of North Carolina at Charlotte, Charlotte, NC Senior Research Analyst- Institutional Research	02/22-Present
University of North Carolina at Charlotte, Charlotte, NC Research Associate Professor- Sociology Department	07/18-01/22
University of North Carolina at Charlotte, Charlotte, NC Assistant Research Professor- Sociology Department	07/11-06/18
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	06/05-06/10
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 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) & <b>Martha C. Bottia</b> (Co-PI)	\$260,480
National Science Foundation, 2014-2019 "Community College Roots of STEM: Interactive Influences of Individual, Secondary School, and College Factors That Predict the Success of Underrepresented Groups" Elizabeth Stearns, (PI), Roslyn Mickelson, Stephanie Moller, <b>Martha Bottia</b> , & DeeDee Allen (Co-PIs).	\$1,600,720

### **Publications**

- Bottia, M. C.**, Mickelson, R. A., & Stearns, E. (2023). Racially diverse educational pathways and STEM college outcomes: A quantitative analysis of students in North Carolina. *Science Education*.  
<https://onlinelibrary.wiley.com/doi/full/10.1002/sce.21797>
- Allen, DD., Dancy, M., Stearns, E., Mickelson, R. & **Bottia, M.C.** (2022). Racism, sexism and disconnection: contrasting experiences of Black women in STEM before and after transfer from community college. *International Journal of STEM Education* 9 (1), 1-21.  
<https://journals.sagepub.com/doi/pdf/10.1177/01614681221086105>
- Bottia, M.C.**, Jamil, C., Stearns, E. & Mickelson, R. (2022). "Socioeconomic Differences in North Carolina College Students' Pathways into STEM." *Teachers College Record*. 124(1), 30-61.  
<https://link.springer.com/article/10.1186/s40594-022-00334-2>
- Mickelson, R., Ayscue, J., **Bottia, M.C.**, & Wilson, J. (2021). "The Past, Present, and Future of Brown's Mandate: A View from North Carolina." *American Behavioral Scientist*.  
<https://journals.sagepub.com/doi/full/10.1177/00027642211033296>

- Bottia, M.C.**, Mickelson, R., Barry, L., and Jamil, C. (2021). "Factors Associated with College STEM Participation of Racially Minoritized Students: A Synthesis of Research." *Review of Educational Research*, 91(4), 614-648. <https://journals.sagepub.com/doi/abs/10.3102/00346543211012751>
- Mickelson, R, **Bottia, M.C.**, & Larimore, S. (2020). "A Metaregression Analysis of the Effects of School Racial and Ethnic Composition on K-12 Reading, Language Arts, and English Outcomes." *Sociology of Race and Ethnicity*, 7(3), 401-419. <https://journals.sagepub.com/eprint/C9GXHEN7PH3ZYMETDTDV/full>
- Bottia, M. C.**, Stearns, E., Mickelson, R. A., Moller, S., & Jamil, C. (2020). "The Importance of Community Colleges in Students' Choice to Major in STEM." *The Journal of Higher Education*, 1-33. <https://www.tandfonline.com/doi/abs/10.1080/00221546.2020.1742032>
- Stearns, E., **Bottia, M.C.**, Giersch, J., Mickelson, R., Moller, S., Jha, N., & Dancy, M. (2019). "Do Relative Advantages in STEM Grades Explain the Gender Gap in Selection of a STEM Major in College? A Multimethod Answer." *American Educational Research Journal*, 57 (1), 218-257 <https://journals.sagepub.com/doi/full/10.3102/0002831219853533>
- Bottia, M.C.** (2019). "Educational and Residential Segregation of Immigrants in the United States," *PRRAC Report*. <https://files.eric.ed.gov/fulltext/ED598425.pdf>
- Giersch, J., **Bottia, M.C.**, Mickelson, R.A., Stearns, E. & Moller, S. (2019). "The Predictive Role of School Performance Indicators on Students' College Achievement." *Educational Policy*, 35(7), 1085-1115. <https://journals.sagepub.com/doi/abs/10.1177/0895904819857827>
- Mickelson, R., Stearns, E., **Bottia, M.C.**, Rainey, K., Dancy, M., Moller, S., Allen, D. & Giersch, J. (2019). "The Roots of Race, Class, and Gender Disparities in College STEM Outcomes in North Carolina". *Poverty & Race*, Vol. 28, No.3.
- Bottia, M.C.**, Stearns, E., Mickelson, R. & Moller, S. (2018). "Boosting the Numbers of STEM Majors? The Role of High Schools with a STEM Program," *Science Education*, 102, 85–107. <https://onlinelibrary.wiley.com/doi/abs/10.1002/sce.21318>
- Mickelson, R. A., Giersch, J., Hawn Nelson, A., & **Bottia, M.C.** (2018). "Do Charter Schools Undermine Efforts to Create Racially and Socioeconomically Diverse Public Schools?" in Rotberg, I. C. & Glazer, J. L. (eds). *Parallel Education Systems: Charter Schools and Diversity*. Chapter 8. NY: Teachers College Press.
- Ayscue, J., Hawn Nelson, A., Mickelson, R. A., Giersch, J., & **Bottia, M.C.** (2018). "Charters as a Driver of Resegregation." The Civil Rights Project/Proyecto Derechos Civiles and UNC Charlotte. January 30. <https://www.civilrightsproject.ucla.edu/research/k-12-education/integration-and-diversity/charters-as-a-driver-of-resegregation>
- Bottia, M.C.**, Mickelson, R., Giersch, J., Stearns, E., & Moller, S. (2018). "The Role of High School Racial Composition and Opportunities to Learn in Students' STEM College Participation," *Journal of Research in Science Teaching*, 55, 446-473. <https://onlinelibrary.wiley.com/doi/abs/10.1002/tea.21426>

- 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. <https://www.journals.uchicago.edu/doi/10.1086/687274>
- 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) <http://epaa.asu.edu/ojs/article/view/2123>
- Bottia, M.C.**, Mickelson, R. Giersh, J., Stearns, E. & Moller, S. (2016). "Distributive Justice Antecedents of Race and Gender Disparities in First Year College Performance," *Social Justice Research*, 1-28. <https://www.springerprofessional.de/en/distributive-justice-antecedents-of-race-and-gender-disparities-/5760994>
- Stearns, E., **Bottia, M.C.**, Davalos, E., Mickelson, R., Moller, S. & Valentino, L. (2016). "High School Math and Science Teachers and Girls' Success in STEM," *Social Problems*, (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*. NY: Teacher College Press. [https://www.tcpres.com/school-integration-matters-9780807757550?page\\_id=90](https://www.tcpres.com/school-integration-matters-9780807757550?page_id=90)
- 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. <https://www.sciencedirect.com/science/article/abs/pii/S0272775715000035>
- Bottia, M.C.**, Stearns, E., Mickelson, R., Moller, S., & Parker, A.D. (2015). "Do Learning Experiences of Inspiration/Reinforcement and Preparation During High School Increase the Likelihood of Declaring a STEM Major?" *Teachers College Record*, 117 (4), pp.1-46. <http://www.tcrecord.org/Content.asp?ContentId=17806>
- 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. [https://www.researchgate.net/publication/265737882\\_Is\\_Academic\\_Engagement\\_the\\_Panacea\\_for\\_Achievement\\_in\\_Mathematics\\_across\\_RacialEthnic\\_Groups\\_Assessing\\_the\\_Role\\_of\\_Teacher\\_Culture](https://www.researchgate.net/publication/265737882_Is_Academic_Engagement_the_Panacea_for_Achievement_in_Mathematics_across_RacialEthnic_Groups_Assessing_the_Role_of_Teacher_Culture)
- 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. <https://journals.sagepub.com/doi/full/10.1177/1538192714540533>

- 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.  
<https://www.journals.uchicago.edu/doi/abs/10.1086/676950>
- Kuhns, J.B., Exum, M.L., Clodfelter, T.A. & **Bottia, M.C.** (2014). “A Meta-analysis of the Alcohol and Intoxication Status of Homicide Offenders.” *Homicide Studies*, 18(3): 251–270.  
[https://www.researchgate.net/publication/269393443\\_The\\_Prevalence\\_of\\_Alcohol-Involved\\_Homicide\\_Offending\\_A\\_Meta-Analytic\\_Review](https://www.researchgate.net/publication/269393443_The_Prevalence_of_Alcohol-Involved_Homicide_Offending_A_Meta-Analytic_Review)
- 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.
- 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.
- 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.  
<http://fliphtml5.com/dkuy/ozgf>
- 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.  
<https://revistas.urosario.edu.co/index.php/economia/article/view/2820>
- Bottia, M.C.** (2010). “Drug control policies: The cases of Colombia and the United States.” ProQuest Dissertation.  
[http://libres.uncg.edu/ir/uncc/f/Bottia\\_uncc\\_0694D\\_10085.pdf](http://libres.uncg.edu/ir/uncc/f/Bottia_uncc_0694D_10085.pdf)
- 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.  
<http://scholarship.law.unc.edu/cgi/viewcontent.cgi?article=4423&context=nclr>
- 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>
- 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.

<http://www.banrep.gov.co/es/borrador-539>

**Bottia, M.C.** (2003). “La presencia y Expansión Municipal de las FARC: es Avaricia y Contagio, más que Ausencia Estatal (FARC’s presence and expansion at the municipal level: is more greed and diffusion, that lack of State’s presence),” Documentos CEDE03, Universidad de Los Andes.

<https://ideas.repec.org/p/col/000089/003060.html>

### **Book Reviews**

**Bottia, M. C.** (2017). Book Review of “Latina Teachers Creating Careers and Guarding Culture” by Glenda M Flores, *Social Forces*, New York University Press.

<https://nyupress.org/books/9781479813537/>

### **Evaluator Experience**

UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE  
SPARC4 S-STEM program

07/18- 07/22

### **Teaching Experience**

UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE  
Sociological Research Methods

01/15-01/18

UNIVERSIDAD DE LOS ANDES

Crime, Armed Conflict and Drug Trafficking in Colombia  
International Finance

01/01-12/04  
08/01-12/01

### **Professional Associations**

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

### **Languages**

- Spanish: Native
- English: Fluent
- French: Basic Understanding

### **Skills**

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