

J. DANIEL VÉLEZ C.

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University of North Carolina at Chapel Hill

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<https://jdavecas.github.io/>

EDUCATION

Ph.D. Geological Sciences August 2022 - Present
University of North Carolina, Chapel Hill
Expected graduation 06/2026

Ms. Environmental Engineering September 2020
Universidad de Antioquia
Medellín - Colombia

Bs. Sanitary Engineering December 2007
Universidad de Antioquia
Medellín - Colombia

RESEARCH EXPERIENCE

Research Assistant November 2017 - April 2020
Project: Image segmentation technique to track the erosion and progradation of the Atrato River Delta
Universidad de Antioquia

Research Intern August 2009 - December 2012
Project: Limnology - Develop an algorithm and a multilayer model to calculate periods of internal waves in tropical lakes.
Universidad Nacional
Medellín - Colombia

HONORS AND AWARDS

EMES Martin Martin Fund Supplemental Research Award (\$8K)
June 2023

EMES Martin Martin Fund Supplemental Research Award (\$2.7K)
Sept. 2022

Fulbright - Minciencias Scholarship (\$80K)
Sept. 2022

Universidad de Antioquia, Honorable Mention for Master's Thesis
Sept. 2020

Summer School on Environmental Fluid Mechanics **Student Travel Award** -
Santiago de Chile (\$1K)
Nov. 2010

Academic Excellence: Laboratory assistant position at the Biological
Process Lab - Universidad de Antioquia.
2008

PUBLICATIONS

Journals

Vélez, J.D., Betancurth, L. and Cañón, J.: Erosion and progradation in the Atrato River delta: A spatiotemporal analysis with Google Earth Engine, Journal of Facultad de Ingeniería Universidad de Antioquia, **doi: 10.17533/udea.redin.20200688, 2020**

Vélez, J.D., Gómez-Giraldo, A.: Multilayer models to calculate the period of the internal seiches modes in tropical lakes and reservoirs, Journal of Tecnología y Ciencias del Agua, ISSN: 2007-2422, vol. 4 (2), 2013.
(<https://www.redalyc.org/pdf/3535/353531982012.pdf>)

Fulbright - Minciencias Scholarship (\$80K)
Sept. 2022

Guides

Botero, E.A., Jaramillo, S., Vélez, G.F., **Vélez, J.D.** and López, J.P.: Guía para el Manejo Integral de Residuos – Subsector Transporte Terrestre (Guide for Comprehensive Waste Management - land transport cluster), Ed. Universidad Pontificia Bolivariana, ISBN: 978-958-44307-5-5, 2008.
(https://www.sabaneta.gov.co/files/doc_varios/Gu%C3%ADa%20para%20el%20Manejo%20Integral%20de%20Residuos%20-%20Subsector%20de%20transporte%20terrestre.pdf)

Botero, E.A., Jaramillo, S., Vélez, G.F., **Vélez, J.D.** and López, J.P.: Guía para el Manejo Integral de Residuos – Subsector Repuestos y Accesorios (Guide for Comprehensive Waste Management - Car workshops cluster), Ed. Universidad Pontificia Bolivariana, ISBN: 978-958-44306-8-7, 2008.
(https://www.sabaneta.gov.co/files/doc_varios/Gu%C3%ADa%20para%20el%20Manejo%20Integral%20de%20Residuos%20-%20Subsector%20de%20repuestos%20y%20accesorios.pdf)

Botero, E.A., Jaramillo, S., Vélez, G.F., **Vélez, J.D.** and López, J.P.: Guía para el Manejo Integral de Residuos – Subsector Confección, Telas y Vestuario (Guide for Comprehensive Waste Management - Textile industry), Ed. Universidad Pontificia Bolivariana, ISBN: 978-958-44307-0-0, 2008.
(https://www.sabaneta.gov.co/files/doc_varios/Gu%C3%ADa%20para%20el%20Manejo%20Integral%20de%20Residuos%20-%20Subsector%20confeccion,%20telas%20y%20vestuario.pdf)

Botero, E.A., Jaramillo, S., Vélez, G.F., **Vélez, J.D.** and López, J.P.: Guía para el Manejo Integral de Residuos – Subsector Industria Litográfica (Guide for Comprehensive Waste Management - Lithographic industry), Ed. Universidad Pontificia Bolivariana, ISBN: 9978-958-44306-6-3, 2008.
(https://www.sabaneta.gov.co/files/doc_varios/Gu%C3%ADa%20para%20el%20Manejo%20Integral%20de%20Residuos%20-%20Subsector%20de%20litografia.pdf)

Botero, E.A., Jaramillo, S., Vélez, G.F., **Vélez, J.D.** and López, J.P.: Guía para el Manejo Integral de Residuos – Subsector Calzado, Cuero, Plástico y sus manufacturas (Guide for Comprehensive Waste Management - Shoe, leather and plastic industries), Ed. Universidad Pontificia Bolivariana, ISBN: 978-958-44-3069-4, 2008.
(https://www.sabaneta.gov.co/files/doc_varios/Gu%C3%ADa%20para%20el%20Manejo%20Integral%20de%20Residuos-%20Subsector%20de%20calzado,%20cuero,%20plastico%20y%20sus%20manufacturas.pdf)

Botero, E.A., Jaramillo, S., Vélez, G.F., **Vélez, J.D.** and López, J.P.: Guía para el Manejo Integral de Residuos – Subsector Minimercados y abarrotes, (Guide for Comprehensive Waste Management - Mini-markets and grocery stores), Ed. Universidad Pontificia Bolivariana, ISBN: 978-958-44306-4-0, 2008.
(https://www.sabaneta.gov.co/files/doc_varios/Gu%C3%ADa%20para%20el%20Manejo%20Integral%20de%20Residuos%20-%20Subsector%20de%20minimercado%20y%20abarrotes.pdf)

Botero, E.A., Jaramillo, S., Vélez, G.F., **Vélez, J.D.** and López, J.P.: Guía para el Manejo Integral de Residuos – Subsector Productos Químicos (Guide for Comprehensive Waste Management - Chemical products industry), Ed. Universidad Pontificia Bolivariana, ISBN: 978-958-44306-7-0, 2008.
(https://www.sabaneta.gov.co/files/doc_varios/Gu%C3%ADa%20para%20el%20Manejo%20Integral%20de%20Residuos%20-%20Subsector%20de%20productos%20quimicos.pdf)

Botero, E.A., Jaramillo, S., Vélez, G.F., **Vélez, J.D.** and López, J.P.: Guía para el Manejo Integral de Residuos – Subsector Colchones (Guide for Comprehensive Waste Management - Mattresses industry), Ed. Universidad Pontificia Bolivariana, ISBN: 978-958-44307-4-8, 2008.
(https://www.sabaneta.gov.co/files/doc_varios/Gu%C3%ADa%20para%20el%20Manejo%20Integral%20de%20Residuos%20-%20Subsector%20de%20colchones.pdf)

Botero, E.A., Jaramillo, S., Vélez, G.F., **Vélez, J.D.** and López, J.P.: Guía para el Manejo Integral de Residuos – Subsector Fotografía (Guide for Comprehensive Waste Management - Photography industry), Ed. Universidad Pontificia Bolivariana, ISBN: 978-958-44307-3-1, 2008.

(https://www.sabaneta.gov.co/files/doc_varios/Gu%C3%ADa%20para%20el%20Manejo%20Integral%20de%20Residuos%20-%20Subsector%20de%20fotografia.pdf)

Botero, E.A., Jaramillo, S., Vélez, G.F., **Vélez, J.D.** and López, J.P.: Guía para el Manejo Integral de Residuos – Subsector Instituciones Educativas (Guide for Comprehensive Waste Management - Educational institutes), Ed. Universidad Pontificia Bolivariana, ISBN: 978-958-44307-1-7, 2008.

(https://www.sabaneta.gov.co/files/doc_varios/Gu%C3%ADa%20para%20el%20Manejo%20Integral%20de%20Residuos-%20Subsector%20instituciones%20educativas.pdf)

Botero, E.A., Jaramillo, S., Vélez, G.F., **Vélez, J.D.** and López, J.P.: Guía para el Manejo Integral de Residuos – Subsector Pequeño Comercio (Guide for Comprehensive Waste Management - Shopping sector), Ed. Universidad Pontificia Bolivariana, ISBN: 9978-958-44307-2-4, 2008.

(https://www.sabaneta.gov.co/files/doc_varios/Gu%C3%ADa%20para%20el%20Manejo%20Integral%20de%20Residuos%20-%20Subsector%20de%20peque%C3%B1o%20comercio.pdf)

PARTICIPATION IN ACADEMIC AND SCIENTIFIC EVENTS

Talk, “Multilayer model to calculate the period of natural modes of oscillation in tropical reservoirs,” IARH - Latin-American Hydraulics Congress. Uruguay, November 2010.

Attendant, Latin-American Hydraulics Congress, IARH. Punta del Este, Uruguay, November 2010.

Attendant, Summer School on Environmental Fluid Mechanics, at the University of Chile. Santiago de Chile, January 2009.

Attendant, I National Congress on Swamps and Lagoons of Colombia, at the University of Antioquia – University Research Campus. Colombia, September 2008.

TEACHING

ADJUNCT PROFESSOR

Mar 2021 - Dec 2021

Hydroclimatology - 15 students
Facultad de Ciencias Agrarias
Politecnico Jaime Isaza Cadavid
Medellín, Antioquia

ADJUNCT PROFESSOR

Mar 2015 - Nov 2016

Hydroclimatology - 20 students
Universidad Nacional de Colombia - Sede Medellín
Medellín, Antioquia

PROFESSIONAL EXPERIENCE

**CORPORACIÓN AUTÓNOMA REGIONAL DE LOS
RIOS NEGRO Y NARE - CORNARE**

Oct 2019 – Jul 2022

(Territorial Governmental Authority for natural resources care and manage)
Hydraulic and Environmental Specialist
Santuario - Colombia

SEDIC S.A. Consulting Engineers

Aug 2012-Mar 2013

Hydraulic and Environmental Specialist
Medellín-Colombia

Jun 2015-Oct 2019

**PLANES Y MANEJOS AMBIENTALES – PLYMA
2012**

Nov-2011-Jul

Project Manager
Medellín - Colombia

GOTTA INGENIERÍA S.A.S.

Sep 2011 - Feb 2012

Sanitary Engineer
Medellín - Antioquia

ACADEMIC EVALUATION COMMITTEE

Redcolsi Foundation 2021

Academic Evaluation Committee

Project: Diseño de un fotocolorímetro de bajo costo para medición de flujo continuo (Design of a low-cost photocolormeter for continuous flow measurement)

Redcolsi Foundation 2021

Academic Evaluation Committee

Project: Estudio analítico y numérico de un prototipo de motor cohete (Analytical and numerical study of a prototype rocket engine)

Redcolsi Foundation 2021

Academic Evaluation Committee

Project: Fabricación y pruebas de probetas para la caracterización de propolente sólido compuesto para motores cohete (Manufacture and testing of specimens for the characterization of solid compound propellant for rocket engines)

Redcolsi Foundation 2021

Academic Evaluation Committee

Project: Estudio del potencial de infiltración de un suelo y su capacidad de purificación de lixiviados procedentes de rellenos sanitarios (Study of the potential of infiltration of a soil and its capacity to purify leachates from landfills)

SOFTWARE LANGUAGES AND PROGRAMS

Proficient: R, Matlab, Python, Google Earth Engine, GIS software, HecRAS, HeCHMS.

Familiar: Javascript, HTML, CSS

LANGUAGES

Spanish: Native

English: Advance

Portuguese: Advance