

Gabriela Chiquito Gesualdo

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 ORCID: [0000-0001-6589-3397](https://orcid.org/0000-0001-6589-3397)

 LinkedIn: [Gabriela Gesualdo](#)

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EDUCATION

- 2019 – 2023 **PhD in Hydraulic Engineering and Sanitation**
São Carlos School of Engineering – University of São Paulo (Brazil)
PhD Thesis: [Adaptation measure for increasing water security in basins under change](#)
Advisor: *Prof. Eduardo Mario MENDIONDO*
- 2022 **Research stay**
Albert-Ludwigs-Universität Freiburg (Germany)
Advisor: *Dr. Manuela I. Brunner*
- 2017 – 2019 **Master of Science in Environmental Sanitation and Water Resources**
Faculty of Engineering, Architecture and Urbanism, and Geography – Federal University of Mato Grosso do Sul (Brazil)
Master's Dissertation: [Assessing Water Security in the Sao Paulo Metropolitan Region Under Projected Climate Change](#)
Advisor: *Prof. Paulo T. S. de Oliveira*
- 2011 – 2016 **Bachelor of Science in Environmental Engineering**
Faculty of Engineering, Architecture and Urbanism, and Geography – Federal University of Mato Grosso do Sul (Brazil)
Bachelor's Dissertation: *Analysis of the Natural Vulnerability of Springs in the Environmental Protection Area of Corrego Guariroba, Campo Grande - MS*
Advisor: *Prof. Giancarlo Lastoria*

APPOINTMENTS

- 2023 – Present **Postdoctoral research associate**
Department of Geosciences – The Pennsylvania State University (USA)
- November 2022 – July 2023 **Research Assistant**
Potsdam Institute for Climate Impact Research (PIK) (Germany)
- January – December 2021,
August – December 2020 **Teaching Assistant**
Applied Hydrology, Wastewater collection systems,
General Hydrology - University of São Paulo (Brazil)
- August – December 2018 **Teaching Assistant**
General Hydrology - Federal University of Mato Grosso do Sul (Brazil)
- 2016 – 2017 **Design Engineer**
MasterPro Engenharia (Brazil)
- 2014 – 2015 **Laboratory Assistant**
Underground and Contaminated Water Laboratory (LASAC) - Federal University of Mato Grosso do Sul (Brazil)
- February – July 2012 **Teaching Assistant**
Calculus II - Federal University of Mato Grosso do Sul (Brazil)

- 2025 Kobayashi, A., Anache, J., Sone, J., **Gesualdo**, G., Schwamback, D., and Wendland, E. 2025. Enhancing representativeness of eddy covariance evapotranspiration with remote sensing and in-situ data: a case study in the Brazilian Cerrado. *Ecohydrology*, <https://doi.org/10.1002/eco.70012>.

Benso, M. R., Silva, R. F., **Gesualdo**, G. C., Saraiva, A. M., Delbem, A. C. B., Marques, P. A. A., Marengo, J. A., and Mendonado, E. M. 2025. A data-driven framework for assessing climatic impact drivers in the context of food security. *Nat. Hazards Earth Syst. Sci.* <https://doi.org/10.5194/nhess-25-1387-2025>.
- 2024 **Gesualdo**, G. C., Benso, M. R., Mendonado, E. M., Brunner, M. I. 2024. Spatially Compounding Drought Events in Brazil. *Water Resources Research*, <https://doi.org/10.1029/2023WR036629>

Gesualdo, G. C., Benso, M. R., Saas, K., Mendonado, E. M. 2024. Index-based insurance to mitigate current and future extreme events financial losses for water utilities. *Int. Jour. of Disaster Risk Reduction*, <https://doi.org/10.1016/j.ijdr.2023.104218>

Gesualdo, G. C., Benso, M. R., Navarro, F. A. R., Castillo, L. M., Mendonado, E. M. 2024. Mitigating Drought Financial Risk for Water Supply Sector through Index-Based Insurance Contracts. *Proceedings of IAHS*, <https://doi.org/10.5194/piahs-385-117-2024>
- 2023 Ballarin, A.S., Sone, J.S., **Gesualdo**, G.C., Schwamback, D., Reis, A., Almagro, A., Wendland, E.C. 2023. CLIMBra - Climate Change Dataset for Brazil. *Sci. Data*, <https://doi.org/10.1038/s41597-023-01956-z>

Benso, M. R., **Gesualdo**, G. C., Silva, R. F., Silva, G. J., Castillo Rápalo, L. M., Navarro, F. A. R., Marques, P. A. A., Marengo, J. A., and Mendonado, E. M. 2023. Review article: Design and evaluation of weather index insurance for multi-hazard resilience and food insecurity. *Nat. Hazards Earth Syst. Sci.*, <https://doi.org/10.5194/nhess-23-1335-2023>.

Van Hateren, T.S, Jongen, H.J., Al-zawaidah, H., **Gesualdo**, G.C. et al. 2023. Where should hydrology go? An early-career perspective on the next IAHS Scientific Decade: 2023-2032. *Hydrological Sciences Journal*, <https://doi.org/10.1080/02626667.2023.2170754>
- 2022 Sone, J.S., Araujo, T.F., **Gesualdo**, G.C., Ballarin, A.S., Carvalho, G.A., Oliveira, P.T.S, Wendland, E.C. 2022. Water security in an uncertain future: contrasting realities from an availability-demand perspective. *Water Res. Management*, <https://doi.org/10.1007/s11269-022-03160-x>

Schwamback, D., **Gesualdo**, G.C., Sone J.S., Kobayashi, A.N.A., Bertotto, L.E., Garcia, M.V.S., Almagro, A., Oliveira, P.T.S. 2022. Are Brazilian catchments gaining or losing water? The effective area of tropical catchments. *Hydrol. Process.* 36, 1-13. <https://doi.org/10.1002/hyp.14535>
- 2021 **Gesualdo**, G.C., Sone, J.S., Galvão, C.O., Martins, E.S., Montenegro, S.M.G.L., Tomasella, J., Mendonado, E.M. 2021. Unveiling water security in Brazil: current challenges and future perspectives. *Hydrol. Sci. J.* 66, 759–768. <https://doi.org/10.1080/02626667.2021.1899182>

Navarro, F. A. R., **Gesualdo**, G. C., Rápalo, L. M. C., Benso, M. R., Ferreira, R. G., Macedo, M. B., Mendonado, E. M. 2021. A Novel Multistage Risk Management Applied to Water-Related Disaster Using Diversity of Measures: A Theoretical Approach, *Ecohydrology & Hydrobiology*, <https://doi.org/10.1016/j.ecohyd.2021.07.004>
- 2019 **Gesualdo**, G. C., Oliveira, P. T. S., Rodrigues, D. B. B., and Gupta, H. V. 2019. Assessing Water Security in the São Paulo Metropolitan Region Under Projected Climate Change, *Hydrol. Earth Syst. Sci.* <https://doi.org/10.5194/hess-2019-134>

Sone, J.S., **Gesualdo**, G.C., Zamboni, P.A.P., Vieira, N.O.M., Mattos, T.S., Carvalho, G.A., Rodrigues, D.B.B., Alves Sobrinho, T., Oliveira, P.T.S. 2019. Water provisioning improvement through payment for ecosystem services. *Sci. Total Environ.* 655, 1197–1206. <https://doi.org/10.1016/j.scitotenv.2018.11.319>

**PUBLICATIONS IN
PREPARATION AND UNDER
REVIEW (n=3)**

Gesualdo, G. C., Hadjimichael, A. Detecting flash drought events to inform adaptive water management. (to be submitted to *Nature Water*, April 2025).

Fontoura, T., Sone, J.S., **Gesualdo**, G.C., T., Oliveira, P.T.S. Hydrological whiplash and shifts in water availability unfold challenges in water management under different futures. (to be submitted to *Water Resources Research*, April 2025).

Silva, P., Benso, M.R., **Gesualdo**, G.C., Silva, G. M., Sankarankutty, R., Bressiani, D., Costa, R. S., Pereira, E. B., Galvinctio, J. D., Cuartas, A., Montenegro, S., Taffarello, D., Krol, M., Mendiondo, E.M. Sustainable transitions in tropical reservoirs as sociotechnical systems using forest restoration for carbon footprint offsetting. (Under review *Resources, Conservation and Recycling Advances*).

**AWARDS AND
FELLOWSHIPS**

2022 **Allianz Climate Risk Award**

The Edition supports researchers whose work focuses on reducing the risk of extreme weather events that are intensified by climate change and fostering resilience by applying technological solutions

2022 **Grant for a 6-month research stay at Albert-Ludwigs-Universität Freiburg, Germany**

Coordination for the Improvement of Higher Education Personnel (CAPES - Brazil) - €10,590

2019 – 2022 **Fellowship for a 38-month research project (PhD)**

Coordination for the Improvement of Higher Education Personnel (CAPES - Brazil) - R\$83,600

2017 – 2019 **Fellowship for a 24-month research project (Master)**

Coordination for the Improvement of Higher Education Personnel (CAPES - Brazil) - R\$36,000

2017 **Travel Grant**

American Geophysical Union (AGU - USA) - \$1000

**GRADUATE STUDENTS
CO-ADVISING**

December 2024 – Present

Priscila Vasconcelos - PhD Dissertation

State University of Campinas - Advisor: Murilo C. Lucas

Project: *Illuminating flash droughts in Brazil and their projections under climate change*

January – December 2020

Julienne Garcia - Master Thesis

Federal University of Mato Grosso do Sul - Advisor: Dulce B. B. Rodrigues

Dissertation titled: *Current and Future Water Security in Representative Basins of the Brazilian Territory*.

**UNDERGRADUATE
STUDENTS CO-ADVISING**

2024 – 2025

Rayna Palkewicz - Senior Thesis

The Pennsylvania State University - Advisor: Antonia Hadjimichael

Project title: *Assessing the Impact of Flash Droughts in Media Reports: A Case Study of the Tampa Bay Region*.

Summer 2024

Sierra Wright - Research Experience for Undergraduates (REU)

The Pennsylvania State University - Advisor: Antonia Hadjimichael

Project title: *Identifying Flash Droughts Through Literary Journalism and Gray Literature*.

August – November 2018

Guilherme Cabral - Senior Thesis

Federal University of Mato Grosso do Sul - Advisor: Paulo T. S. de Oliveira

Senior thesis titled: *Water Footprint in Beef and Dairy Farming: Brazil vs. the World*

January – August 2018

Gabriela Nakasato - Senior Thesis

Federal University of Mato Grosso do Sul - Advisor: Paulo T. S. de Oliveira

Senior thesis titled: *Hydrological Modeling in a Tropical Basin with Data Scarcity*

PROFESSIONAL SERVICE AND ASSOCIATION

2023 – Present

Facilitation team, MultiSector Dynamics Community of Practice (MSD)

2023 – Present

Co-chair events, American Geophysical Union Hydrology Section Student Subcommittee (H3S)

2023 – Present

Founding member, Young Hydrological Society - chapter Brazil (YHS-Br)

2023 – 2024

Co-chair, Postdocs society at Penn State in the College of Earth and Mineral Sciences (PoEMS)

CONVENED SESSION AND EVENTS ORGANIZATION

December 2024

Town Hall Session: *Navigating Research Collaboration as an Early Career Researcher*

America Geophysical Union Fall Meeting 2024

October 2024

Young Hydrological Society Latin America School - YHS Latam school (Virtual)

Young Hydrological Society (YHS) chapter Brazil and Chile

September 2019

School of Advanced Sciences on Water & Societies under Change (SASW&SC): SWAT Applied to Water Security under Climate Change

University of São Paulo (Brazil)

September 2012

I Groundwater Symposium of Mato Grosso do Sul

Federal University of Mato Grosso do Sul, Institute of the Environment of Mato Grosso do Sul and the National Department of Mineral Production (Brazil)

INVITED AND CONFERENCES PRESENTATIONS

Invited presentations

Gesualdo, G. C. 2024. *Unraveling Complexity: Understanding Compound Events and Their Typologies Through Case Studies*. Climate Dynamics Seminar, The Pennsylvania State University.

Gesualdo, G. C. 2024. *What Do We Need to Know About Compound Events?*. Water Cooler Series, Penn State Association of Water Students.

Conferences presentations

Gesualdo, G. C., Hadjimichael, A. 2024. Navigating Epistemic Uncertainty in the Management of Flash Droughts. 11th Annual Conference of the Society for Decision Making Under Deep Uncertainty (DMDU). <https://doi.org/10.57931/2500385>

Gesualdo, G. C., Benso, M. R., Mendiondo, E. M. 2023. Assessment of Spatially Compound Flood Events in Brazilian Catchments. XXV Brazilian Symposium of Water Resources.

Gesualdo, G. C., Brunner, M. I., Mendiondo, E. M. 2022. Learning from Spatially Compounding Drought Events to Multi-Hazard Risk Adaptation in Brazil. American Geophysical Union Fall Meeting 2022. <https://doi.org/10.5194/egusphere-egu22-410>

Gesualdo, G. C., Benso, M. R., Brunner, M. I., Mendiondo, E. M. 2022. Spatiotemporal distribution of hydrological extremes in Brazil. European Geosciences Union General Assembly 2022.

Gesualdo, G. C., Benso, M. R., Navarro, F. R., Castillo, L. R., Mendiondo, E. M. 2021. The Context of Indexed Insurance as a Tool for Adaptation to Extreme Events. XXIV Brazilian Symposium of Water Resources.

Conferences presentations

Gesualdo, G.C., Sone, J.S., Galvão, C.O., Martins, E.S., Montenegro, S.M.G.L., Tomasella, J., Mendiondo, E.M. 2021. A summary of: Unveiling Water Security in Brazil, Current Challenges and Future Perspectives. XXIV Brazilian Symposium of Water Resources.

Gesualdo, G. C., Oliveira, P. T. S., Rodrigues, D. B. B., and Gupta, H. V. 2019. Projected Climate Change Effects on Water Availability of the Metropolitan Region of São Paulo. XXIII Brazilian Symposium of Water Resources.

Gesualdo, G. C., Polon, C. S. B., Colla Leite, P. C., Lastoria, G., Gabas, S. G., Cavazzana, G. H., Casadei, J. M., Azoia, T. S. 2016. Hydrochemistry of Underground and Surface Waters in The Environmental Protection Area of Guarirôba River Basin, Campo Grande-MS. XIX Brazilian Underground Water Congress.

CONFERENCES ABSTRACTS

2025 de Brito, M. M., Rotaru, A. M., Wang, J., **Gesualdo**, G. C., Hasbini, L., Severino, L., Carvalho, T. M. N. 2025. Developing a multi-hazard impact and response dataset for the Global South. European Geosciences Union General Assembly 2025. *Poster*. <https://doi.org/10.5194/egusphere-egu25-17817>.

2024 **Gesualdo**, G. C. Hadjimichael. A. 2024. Detecting flash drought events to inform adaptive water management. American Geophysical Union Fall Meeting 2025. <https://doi.org/10.57931/2500386>

Gesualdo, G. C. Hadjimichael. A. 2024. Detecting flash drought events to inform adaptive water management. American Geophysical Union Fall Meeting 2024. *Poster*. <https://doi.org/10.57931/2500386>.

2023 **Gesualdo**, G. C., Benso, M. R., Mendiondo, E. M. 2023. Assessing Spatially Compounding Flood Events in Brazilian Catchments. American Geophysical Union Fall Meeting 2023. *Poster*.

Ballarin, A. S., Sone, J. S., **Gesualdo**, G. C., Schwamback, D., Reis, A., Almagro, A., Wendland, E. C. 2023. CLIMBra: Climate Change Dataset for Brazil. XXV Brazilian Symposium on Water Resources. *Oral presentation*.

Benso, M. R., **Gesualdo**, G. C., Da Silva, P. G. C., Da Silva, G. J., Mendiondo, E. M. 2023. Is the Future Hot and Dry? An Assessment of Moisture-Temperature Couplings in Brazil Under Climate Change Scenarios. XXV Brazilian Symposium on Water Resources. *Oral presentation*.

Da Silva, P. G. C., Benso, M. R., Da Silva, G. J., **Gesualdo**, G. C. et al. 2023. Dam Safety in Brazil: Quantification of Accidents and Incidents from 2017 to 2021. XXV Brazilian Symposium on Water Resources. *Poster*.

a Silva, P. G. C., Benso, M. R., Da Silva, G. J., **Gesualdo**, G. C. et al. 2023. Challenges and Opportunities of Transitioning to Solar Energy in Brazil's Water Resource Management. XXV Brazilian Symposium on Water Resources. *Poster*.

2022 **Gesualdo**, G. C., Benso, M. R., Navarro, F. A. R., Rapalo, L. M. C., Mendiondo, E. M. 2022. Index-Based Insurance to Mitigate Drought Financial Losses for the Water Supply Sector. IAHS Scientific Assembly. *Oral presentation*. <https://doi.org/10.5194/iahs2022-645>.

Benso, M. R., Silva, R. F., **Gesualdo**, G. C., Mendiondo, E. M., Saraiva, A. M., Marques, P. A. A., Delbem, A. C. B. 2022. Artificial Intelligence for Agricultural Drought Monitoring Based on Soil Moisture and Crop Yield Under Change. IAHS Scientific Assembly. *Oral presentation*. <https://doi.org/10.5194/iahs2022-407>.

Schwamback, D., Sone, J. S., **Gesualdo**, G. C., Watanabe, A., Zepon, F., Scutti, L., Castro, L., Wendland, E. 2022. How Do Runoff and Soil Loss Vary Over Time in Subtropical Areas?. European Geosciences Union General Assembly 2022. *Oral presentation*. <https://doi.org/10.5194/egusphere-egu22-13197>.

Sone, J. S., **Gesualdo**, G. C., Schwamback, D., Wendland, E., Brouwer, R. 2022. Public Perception of Droughts and Water Shortages and Metropolitan Willingness to Pay for Water-Saving Measures to Improve Water Security. European Geosciences Union General Assembly 2022. *Oral presentation*. <https://doi.org/10.5194/egusphere-egu22-13392>.

- 2021 Silva, R. F., Benso, M. R., **Gesualdo**, G. C., Mendingo, E. M., Saraiva, A. M., Marques, P. A. A., Delbem, A. C. B. 2021. Multi-Objective Methods for Crop Insurance Premiums: Framework Proposal and a Case Study in Sugarcane. 13th Brazilian Congress on Agroinformatics. *Oral presentation*. <https://doi.org/10.5753/sbiagro.2021.18394>.
- Garcia, J. G. A., Rodrigues, D. B. B., Oliveira, P. T. S., **Gesualdo**, G. C., Araujo, T. F. 2021. Future Water Availability in a Public Water Supply Basin. XXIV Brazilian Symposium on Water Resources. *Poster*.
- Navarro, F. A. R., Benso, M. R., **Gesualdo**, G. C., Rapalo, L. M. C., Passos, V. E. A., Silva, P. F., Mendingo, E. M. 2021. New Opportunities for Water Security and Resilience to Natural Disaster Risks: WTP, WTA, and WTADAPT. XXIV Brazilian Symposium on Water Resources. *Poster*.
- Rapalo, L. M. C., Benso, M. R., **Gesualdo**, G. C., Navarro, F. A. R., Mendingo, E. M. 2021. Parallelization of Multi-Risk Insurance Models for Hydrological Extremes: A Conceptual Approach. XXIV Brazilian Symposium on Water Resources. *Oral presentation*.
- Benso, M. R., **Gesualdo**, G. C., Rapalo, L. M. C., Navarro, F. A. R., Mendingo, E. M. 2021. Non-Stationarity of Extreme Hydrological Events as an Adaptation Criterion in the Context of Index-Based Insurance. XXIV Brazilian Symposium on Water Resources. *Poster*.
- Schwamback, D., **Gesualdo**, G. C., Sone, J. S., Kobayashi, A. N. A., Bertotto, L. E., Garcia, M. V. S., Almagro, A., Oliveira, P. T. S., Wendland, E. 2021. Do Brazilian Catchments Gain or Lose Water? XXIV Brazilian Symposium on Water Resources. *Oral presentation*.
- Da Silva, R. F., **Gesualdo**, G. C., Benso, M. B., Fava, M. C., Mendingo, E. M., Saraiva, A. M., Delbem, A. C. B. 2021. A Data-Driven Framework for Identifying Productivity Zones and the Impact of Agricultural Droughts in Sugarcane Using SPI and Unsupervised Learning. IEEE International Workshop on Metrology for Agriculture and Forestry (MetroAgriFor). *Oral presentation*.
- Benso, M. R., **Gesualdo**, G. C., Mendingo, E. M., Ribbe, L., Nauditt, A. 2021. Developing resilience to hydrologic extremes in irrigated agriculture through risk transfer mechanisms in the context of southeastern Brazil. European Geosciences Union General Assembly, 2021, Gather Online. *Oral presentation*. <https://doi.org/10.5194/egusphere-egu21-6781>.
- Benso, M. R., Silva, R. F., **Gesualdo**, G. C., Navarro, F. A. R., Rapalo, L. M. C., Mendingo, E. M. 2021 Risk transfer for mitigating threats on water resources services under global changes. 1st Latin American Conference on Health and Environmental Education: from climate change to quality of life in cities, 2021. *Oral presentation*.
- Passos, V. E. A., Rapalo, L. M. C., **Gesualdo**, G. C., Mendingo, E. M., Montenegro, S. M. G. L. 2021. Social Participation and Integrated Methodologies: A new way to understand urban resilience to extreme hydrological events in Latin America. Delft International Conference on Sociohydrology, 2021, Delft. *Oral presentation*.
- 2020 **Gesualdo**, G. C., Souza, F. A. A., Mendingo, E. M. 2020. Insurance Fund as an Adaptation Measure for Increasing Water Security in Basins Under Change. European Geosciences Union General Assembly 2020. *Virtual discussion*. <https://doi.org/10.5194/egusphere-egu2020-8816>.
- Sone, J. S., **Gesualdo**, G. C., Rosalem, L. M. P., Oliveira, P. T. S., Wendland, E. 2020. Trade-offs, synergies and economic relationships among ecosystem services. European Geosciences Union General Assembly 2020. *Virtual discussion*. <https://doi.org/10.5194/egusphere-egu2020-12524>.
- Souza, F. A. A., **Gesualdo**, G. C., Sivapalan, M., Mendingo, E. M. Interactions, and feedbacks between water availability and domestic consumption in São Paulo Metropolitan Area. European Geosciences Union General Assembly 2020. *Virtual discussion*. <https://doi.org/10.5194/egusphere-egu2020-6201>.

- 2019 **Gesualdo**, G. C., Mendiando, E. M. 2019. Integration of Ecosystem Services and Water Security: A Resource Management Approach in Basins Under Change. XXIII Brazilian Symposium on Water Resources. *Poster*.
- Cobalchini, E. R. O., Oliveira, T. R. P., Ishizawa, Y. B., Oliveira, T. H., Sone, J. S., **Gesualdo**, G. C., Fialho, H. C. P., Castro, E. L. H., Sousa, B. J. O., Kobayashi, A. N. A., Mendiando, E. M. 2019. Pedagogical Strategy: Solving Water Resources Problems Under a Holistic Approach. XXIII Brazilian Symposium on Water Resources. *Oral presentation*.
- 2018 Sone, J. S., **Gesualdo**, G. C., Siqueira, P. P., Zamboni, P. A. P., Pereira, R. B., Carvalho, Glauber A., Oliveira, P. T. S. 2018. Assessing Integrated Agricultural Systems for Developing Food Security. American Geophysical Union Fall Meeting 2018. *Poster*.
- Pereira, R. B., Zamboni, P. A. P., **Gesualdo**, G. C., Siqueira, P. P., Sone, J. S., Goncalves, F. V., Bleninger, T. B. 2018. Particle Image Velocimetry Analysis for the Assessment of Bedload Sampling Using Helley-Smith. American Geophysical Union Fall Meeting 2018. *Poster*.
- Gesualdo**, G. C., Siqueira, P. P., Sone, J. S., Zamboni, P. A. P., Pereira, R. B., Oliveira, P. T. S. 2018. Projected Climate Change Effects on Water Availability of the Metropolitan Region of São Paulo. American Geophysical Union Fall Meeting 2018. *Poster*. <https://doi.org/10.1002/essoar.10500265.1>.
- Siqueira, P. P., **Gesualdo**, G. C., Pereira, R. B., Zamboni, P. A. P., Sone, J. S., Oliveira, P. T. S. 2018. Food-Energy-Water Security Considering Climate and Land Use Changes in the São Francisco River Basin. American Geophysical Union Fall Meeting 2018. *Poster*. <https://doi.org/10.1002/essoar.10500563.1>.
- 2017 **Gesualdo**, G. C., Oliveira, P. T. S., Rodrigues, D. B. B. 2017. The Future of Water Security in the Metropolitan Region of São Paulo Through Different Climate Scenarios. American Geophysical Union Fall Meeting 2017. *Poster*.
- Gesualdo**, G. C., Oliveira, P. T. S., Rodrigues, D. B. B. 2017. Projections of Climate Change Effects on Discharge in an Agricultural Basin. São Paulo School of Advanced Science on Climate Change: Scientific Basis, Adaptation, Vulnerability, and Mitigation. *Poster*.
- 2016 Leite, P. C. C., **Gesualdo**, G. C., Batista, C. S. P., Lastoria, G., Gabas, S. G., Azoia, T. S., Cavazzana, G. H., Casadei, J. M. 2016. Hydrochemistry of Groundwater and Surface Water in the Guarirôba Environmental Protection Area, Campo Grande-MS. XIX Brazilian Congress of Groundwater. *Oral presentation*.
- Batista, C. S. P., **Gesualdo**, G. C., Leite, P. C. C., Lastoria, G., Gabas, S. G., Azoia, T. S., Cavazzana, G. H., Casadei, J. M. 2016. Application of the GOD Method for Aquifer Vulnerability Assessment in a Watershed. XIX Brazilian Congress of Groundwater. *Oral presentation*.

GRANT WRITING

January 2026 – December 2030

AgriFutures: Empowering Brazilian Agriculture to Be Climate-Smart and Digital in the Face of Global Challenges - *Submitted*

The São Paulo Research Foundation - FAPESP (Brazil)

• Co-PI; PI: Dimaghi Schwambach (University of São Paulo); Total award requested: R\$1,500,000.

April 2023 – March 2025

Hydrological Extremes and the Risk of Agricultural Production Failure in Mato Grosso do Sul - *Approved*

National Council Scientific and technological Development - CNPQ, and Foundation for the Support of the Development of Education, Science, and Technology of the State of Mato Grosso do Sul - FUNDECT (Brazil)

• Co-PI; PI: Paulo T. S. de Oliveira (Federal University of Mato Grosso do Sul); Total award requested: R\$50,000.

GRANT PARTICIPATION

March 2025 – February 2030

Water security challenges towards environmental changes: Interdisciplinary approaches and comparative studies between the Guarani Aquifer System and other hydrological hotspots in Brazil

The São Paulo Research Foundation - FAPESP (Brazil)

- Research associated; PI: Edson C. Wendland (University of São Paulo); Total award amount: R\$2,800,000.

November 2022 – March 2025

Global changes and sustainable development with water-energy viability and economic solvency

The São Paulo Research Foundation - FAPESP (Brazil)

- Research associated; PI: Eduardo M. Mendiolo (University of São Paulo); Total award amount: R\$130,000.

PROFESSIONAL DEVELOPMENT AND SHORT TRAINING

September 2024 – October 2024

3rd Training School on the Statistical Modeling of Compound Events - Summer School

Lake Como School of Advanced Studies (Italy)

October 2022 – October 2023

Didactic-Pedagogical Training for Online Learning Courses

São Paulo State Virtual University (Brazil)

February – April 2022

Global Grad Show Entrepreneurship Program

Global Grad Show - Art Dubai Fair (Dubai)

June 2021

Climate Change and Water Security in Urbanized Watersheds - Virtual Summer School

Water Institute and the Interdisciplinary Centre on Climate Change (IC3) of the University of Waterloo (Canada)

June – September 2021

Innostart - DeepTech Startup Pre-Acceleration Program

Entrepreneurship Center of University of São Paulo, São Carlos (NEU-SC) (Brazil)

July 2027

São Paulo School of Advanced Science on Climate Change: Scientific Basis, Adaptation, Vulnerability and Mitigation - Winter School

Interdisciplinary CLimate INvestigation cEnter (INCLINE) and the Inter-American Institute for Global Change Research (IAI) at the University of São Paulo (Brazil)

COMMITTEE MEMBER

Master's degree

External member of the evaluation committee for Lucas Rickle's Master's thesis titled *"Assessment of the Impacts of Climate Change on the Water Security of the Cantareira System"* at the Federal University of Technology – Parana (UTFPR), August 2024.

External member of the evaluation committee for Thamiris Fountoura's Master's thesis titled *"Assessing hydrological alterations in a tropical basin using an adaptation of the ELOHA framework"* at the Federal University of Mato Grosso do Sul, March 2024.

External member of the evaluation committee for Vinicius Moraes's Master's thesis titled *"Empirical Model of Sectoral Water Demand Based on Watershed Occupation"* at the Federal University of Mato Grosso do Sul, September 2023.

External member of the evaluation committee for Isabela Gallindo's Master's qualification exam titled *"Flood and Inundation Mapping Based on Machine Learning from Media Reports"* at the Federal University of Mato Grosso do Sul, August 2023.

Bachelor's degree	External member of the evaluation committee for Gabriela Souza Brito's senior thesis titled <i>"The Impact of Adopting Conservation Practices in Grazing on Surface Runoff and Soil Erosion: An Approach Using Physical-Based Modeling"</i> for the Environmental Engineering Bachelor's Degree at the Federal University of Mato Grosso do Sul, November 2022.
	Member of the evaluation committee for Fabio Hirose's senior thesis titled <i>"Design of the Treated Water Distribution Network in Pauini-AM"</i> for the Civil Engineering Bachelor's Degree at the University of São Paulo, July 2021.
	Member of the evaluation committee for Vivian Jochelaviciu's senior thesis titled <i>"Development of a Water Distribution System in a Land Regularization Area in the City of Pindamonhangaba – SP"</i> for the Civil Engineering Bachelor's Degree at the University of São Paulo, July 2021.
	Member of the evaluation committee for Juliene Garcia's senior thesis titled <i>"Effect of Climate Change on Water Availability in the Guariroba Creek Watershed"</i> for the Environmental Engineering Bachelor's Degree at the Federal University of Mato Grosso do Sul, June 2019.
	Member of the evaluation committee for Guilherme Cabral's senior thesis titled <i>"Water Footprint in Beef and Dairy Farming: Brazil vs. the World"</i> for the Civil Engineering Bachelor's Degree at the Federal University of Mato Grosso do Sul, November 2018.
	Member of the evaluation committee for Gabriela Nakasato's senior thesis titled <i>"Hydrological Modeling in a Tropical Basin with Data Scarcity"</i> for the Civil Engineering Bachelor's Degree at the Federal University of Mato Grosso do Sul, June 2018.
VOLUNTARY AND OUTREACH ACTIVITIES	Member of the evaluation committee for Luiz C; G. do Valle Junior's senior thesis titled <i>"Initial Abstraction and Curve Number Estimation Using Rainfall and Runoff data"</i> for the Environmental Engineering Bachelor's Degree at the Federal University of Mato Grosso do Sul, August 2017.
	Judge 27th Annual Penn State Interdisciplinary Environmental Research Symposium at the Pennsylvania State University, 2024 and 2025.
	Outstanding Student Presentation Award (OSPA) of the American Geophysical Union Fall Meeting, 2023 and 2024.
	Graduate Colloquium of Geosciences Department at the Pennsylvania State University, 2024 and 2025.
	Earth and Mineral Sciences Graduate Research Showcase at the Pennsylvania State University, 2023.
	Volunteer Volunteer for Poster Help Desk at the American Geophysical Union Fall Meeting, 2018. (USA)
Interviews and media commentaries	Volunteer of the Centennial Survey Team at the American Geophysical Union Fall Meeting, 2017. (USA)
	Volunteer monitor at the II Environmental and Social Exposition of Bonito, 2011. (Brazil)
	Gesualdo , G.C., Benso, M. R., Mendiando, E. M. 2021. Scientists study insurance to mitigate losses caused by droughts and floods. in Portuguese. Journal da USP.
	Gesualdo , G.C. 2021. Researchers from USP São Carlos developed adapted insurance models. in Portuguese. CBN São Carlos Podcast.
	Gesualdo , G.C., Benso, M. R., Mendiando, E. M. 2021. CAPES fellows study new insurance against droughts and floods. in Portuguese. Noticias CAPES.
	Gesualdo , G.C., Sone, J. S., Schwamback, D. 2021. Geoprocessing in Water and Soil Conservation Analysis. in Portuguese. Geotalking - AmbGeo YouTube Channel.

REVIEWER SERVICES

- Water Resources Research
- Earth's Future
- Hydrology and Earth System Science
- Natural Hazards and Earth System Sciences
- Hydrological Sciences Journal
- Water Security
- Geosciences Data Journal
- Scientific Data
- Journal of Soil and Water Conservation
- International Journal of River Basin Management
- Journal of Water Resources Planning and Management
- Brazilian Journal of Water Resources

SKILLS

Languages	Portuguese (native), English (advanced), Spanish (intermediate)
Programming and software	Python, R, MATLAB, Google Earth Engine, Geographic Information Systems (ArcGIS and QGIS), CAD tool (AutoCAD), and Soil and Water Assessment Tool (SWAT)
Data Science and Machine Learning	Big data analytics, (un)supervised machine learning methods, Text and data mining
Field	Field methods in hydrology, climatology, and sedimentology, field campaign design and management
Laboratory	Water and sediment analysis