Marcus N. Gomes Jr.

Curriculum Vitae

3700 N Campbell Avenue, AZ-85719
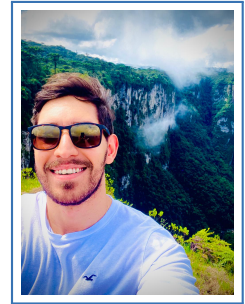+1 520 390-2813
✉ marcusnobrega.engcivil@gmail.com
Ⓡ Marcus Nóbrega
⌂ marcusnobrega-eng
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Academic Background

2020-2023	**Doctor of Phylosophy**, *University of Sao Paulo - Sao Carlos School of Engineering*, Concentration area: Hydraulic Engineering and Sanitation Advisor: Eduardo M. Mendiondo, Ph.D.
2020-2024	**Doctor of Phylosophy**, *University of Texas at San Antonio*, Concentration area: Civil and Environmental Engineering, Status: Graduation in fall 2024. Advisor: Marcio Hofheinz Giacomoni, Ph.D., P.E.
2018–2020	**Master's in Hydraulic Engineering and Sanitation**, *University of Sao Paulo - Sao Carlos School of Engineering.*, Concentration area: Hydraulic Engineering and Sanitation Status: Graduated. Advisor: Eduardo M. Mendiondo.
2012–2017	**B.Sc. in Civil Engineering**, *State University of Maringa - Brazil* Advisor: Germano Romera, M.Sc.

Professional Interests

Researching and developing tools for water resources planning and management.

Supervision

Master's Degree	**Dr. Eduardo Mario Mendiondo**
Ph.D. Degree	**Dr. Marcio Hofheinz Giacomoni**, *Dr. Eduardo Mario Mendiondo*
Postdoctorate	**Dr. Peter Troch**

Skills and Activities

Programming Language	Matlab, Python, VBA

Environment	Latex, Microsoft Office
Operating System	Windows

Work Experience

2020–2023   **Graduate Research Assistant**, *School of Civil and Environmental Engineering, and Construction Management, Department of Civil and Environmental Engineering*
Task: Perform stormwater water quality analysis, develop numerical models, and set up and monitor field experiments. I was responsible for setting up autosamplers, rain gauges, v-notch weirs, and collecting and analyzing samples after storm events. In the water quality analysis, I was responsible for performing total suspended solids, volatile suspended solids, heavy metals, bacteria, pH, and temperature analyzes. In this project, I was also responsible for the hydrological and hydraulic design of different permeable pavement structures funded by the City of San Antonio and constructed in January-2023.

2021–2022   **Teaching Assistant**, *University of Sao Paulo - Sao Carlos School of Engineering*
Task: Develop supporting materials, spreadsheets and numerical models for Applied Hydrology classes. Classes were ofered for students in the Junior year.

2018–2020   **Graduate Research Assistant**, *University of Sao Paulo - Sao Carlos School of Engineering, Department of Hydraulic Engineering and Sanitation*
Task: Perform stormwater water quality analysis, develop numerical models and set up and monitor field experiments. I was also responsible for planning, designing and controlling the excecution of a bioretention system funded by FAPESP grants 2017/21940-2 and 2018/20865-0

2018–2019   **Teaching Assistant**, *University of Sao Paulo - Sao Carlos School of Engineering*
Task: Develop supporting materials, spreadsheets, and numerical models for Applied Hydrology classes. Classes were ofered for students in the Junior year.

2013–2015   **Teaching Assistant**, *State University of Maringa*
Task: Help, teach, and solve tests, exams, and proposed exercises from Physics 1 and Physics II of Civil Engineering and Environmental Engineering Classes. Classes were ofered for students in the Sophomor year.

2012–2017   **Teaching Assistant**, *Curso e Colégio Alfa Preparatory School*
Task: Help, teach, and solve pre-school exams of Physics and Mathematics for students in preparation for college.

Publications - Under Review or In Preparation

Journals

1. L. M. C. Rápalo, M. N. Gomes Jr., D. A. Bressiani, E. M. Mendiondo, "Urban flash floods risk assessment on human instability under climate change", **Journal of Environmental Management**, 2023. (Submmited).
2. M. N. Gomes Jr., A. F. Taha, L. M. C. Rápallo, P. Troch, E. M. Mendiondo, and M. H. Giacomoni, "Real-time Regulation of Detention Ponds via Feedback Control: Balancing Flood Mitigation and Water Quality", **Water Research**, 2024 (Submitted).
3. Jose G. Vasconcelos, Marcus N. Gomes Jr., Paulo Tarso S. Oliveira, Dingyu Wang, Xing Fang, "Reformulating the Rational Method Considering Dissimilar Land Use Types" **Journal of Hydrologic Engineering**, 2024 (Submitted).
4. L. M. C. Rápalo, M. N. Gomes Jr., E. .M. Mendiondo, "Developing an Open-Source Flood Forecasting System Adapted to Data-Scarce Regions: A Digital Twin Coupled with Hydrologic-Hydrodynamic Simulations", **Journal of Hydrology**, 2024 (Submitted).
5. M. N. Gomes Jr., M. H. Giacomoni, F. A. R. Navarro, E. M. Mendiondo, "Global Optimization-Based Calibration Algorithm for a 2D Distributed Hydrologic-Hydrodynamic and Water Quality Model", **Environmental Modeling and Software**, 2024 (Submitted).
6. M. N. Gomes Jr., J. , J. Vijay, E. M. Mendiondo, "Spatial Effect of Rainfall Temporal Distribution into Flood and Human Instability Assessment", **Journal of Hydrologic Engineering**, 2024 (Submitted).
7. M. N. Gomes Jr., M. A. R. A. Castro, P. G. C. da Silva, M. H. Giacomoni, E. M. Mendiondo "Increasing Flood Awareness Through Dam-Break Serious Games", **International Journal of Disaster Risk Reduction**, 2023 (Submitted).

Publications - Published or Accepted

Journals

1. M. N. Gomes Jr.,, C. A. F. do Lago, L. M. C. R apallo, P. T. S. Oliveira, M. H. Giacomoni, and E. M. Mendiondo, "HydroPol2D – Distributed Hydrodynamic and Water Quality Model: Challenges and Opportunities in Poorly-Gauged Catchments," **Journal of Hydrology**, 2023, DOI: https://doi.org/10.1016/j.jhydrol.2023.129982.

2. M. N. Gomes Jr., M. H. Giacomoni, A. F. Taha, and E. M. Mendiondo, "Flood risk mitigation and valve control in stormwater systems: State-space modeling, control algorithms, and case studies," **Journal of Water Resources Planning and Management**, vol. 148, no. 12, p. 04022067, 2022. [Online]. Available: 10.1061/(ASCE)WR.1943-5452.0001588

3. M. N. Gomes Jr., L. M. C. R apalo, P. T. S. Oliveira, M. H. Giacomoni, C. A. F. do Lago, and E. M. Mendiondo, "Modeling unsteady and steady 1-d hydrodynamics under different hydraulic conceptualizations: Model/software development and case studies," **Environmental Modeling and Software**, 2022. DOI: https://doi.org/10.1016/j.envsoft.2023.105733.

4. M. N. Gomes Jr., M. H. Giacomoni, M. B. de Macedo, C. A. F. do Lago, J. A. Teixeira, T. R. Pereira, and E. M. Mendiondo, "A modeling framework for bioretention analysis: Assessing the hydrologic performance under system's uncertainty," **Journal of Hydrologic Engineering**, DOI: https://doi.org/10.1061/JHYEFF.HEENG-5705 2023.

5. M. N. Gomes Jr., P. H. B. Alves, E. M. Mendiondo, and L. F. R. Reis, "Análises estatísticas, visuais e não paramétricas para a otimização do ajuste de curvas IDF e construção de ábacos de projeto de obras hidráulicas: estudo de caso em São Carlos - SP", **Revista DAE**, DOI: https://doi.org/10.36659/dae.2021.013 2020 (In Portuguese).

6. A. S. Ballarin, J. G. S. M. Uchôa, M. S. dos Santos, A. Almagro, I. P. Miranda, P. G. C. da Silva, M. N. Gomes Jr., E. Wendland, P. T. S. Oliveira, "Brazilian water security threatened by climate change and human behavior", **Water Resources Research**, DOI: https://doi.org/10.1029/2023WR034914 2023.

7. do Lago, C.A., Giacomoni, M.H., Bentivoglio, R., Taormina, R., Junior, M.N.G. and Mendiondo, E.M., 2023. Generalizing rapid flood predictions to unseen urban catchments with conditional generative adversarial networks. **Journal of Hydrology**, 618, p.129276, DOI: https://doi.org/10.1016/j.jhydrol.2023.129276.

8. K. McClymont, D. G. F. Cunha, C. Maidment, B. Ashagre, A. F. Vasconcelos, M. B. de Macedo, M. F. N. Dos Santos, M. N. G. Júnior, E. M. Mendiondo, A. P. Barbassa et al., "Towards urban resilience through sustainable drainage systems: A multi-objective optimisation problem", **Journal of Environmental Management**, vol. 275, p. 111173, 2020, DOI: https://doi.org/10.1016/j.jenvman.2020.111173.

9. M. Batalini de Macedo, M. Nobrega Gomes Júnior, T. R. Pereira de Oliveira, M. H. Giacomoni, M. Imani, K. Zhang, C. Ambrogi Ferreira do Lago, and E. M. Mendiondo, "Low impact development practices in the context of united nations sustainable development goals: A new concept, lessons learned and challenges," **Critical Reviews in Environmental Science and Technology**, vol. 52, no. 14, pp. 2538–2581, 2022, DOI: https://doi.org/10.1080/10643389.2021.1886889

10. C. A. F. do Lago, E. M. Mendiondo, M. N. Gomes Jr., J. Brazil, M. H. Giacomoni "Improving Pluvial Flood Mapping Resolution of Large Coarse Models with Deep Learning," **Hydrological Sciences Journal**, 2024 (Accepted).

Journals

11. J. Brasil, M. Macedo, C. Lago, T. Oliveira, M. Júnior, T. Oliveira, and E. Mendiondo, "Nature-based solutions and real-time control: Challenges and opportunities," **Water**, vol. 13, no. 5, p. 651, 2021, DOI: https://doi.org/10.3390/w13050651.

12. J. A. T. Brasil, M. B. de Macedo, T. R. P. de Oliveira, F. G. Ghiglieno, V. C. B. de Souza, G. Marinho e Silva, M. N. Gomes Júnior, F. A. A. de Souza, and E. M. Mendiondo, "Can we scale digital twins of nature-based solutions for stormwater and transboundary water security projects?" **Journal of Hydroinformatics**, 2022, DOI: https://doi.org/10.2166/hydro.2022.142

13. M. Batalini de Macedo, M. N. Gomes Júnior, V. Jochelavicius, T. R. P. de Oliveira, and E. M. Mendiondo, "Modular design of bioretention systems for sustainable stormwater management under drivers of urbanization and climate change," **Sustainability**, vol. 14, no. 11, p. 6799, 2022, https://doi.org/10.3390/su14116799.

14. T. R. P. de Oliveira, M. B. de Macedo, T. H. Oliveira, C. A. F. do Lago, M. N. Gomes Jr, J. A. T. Brasil, and E. M. Mendiondo, "Different configurations of a bioretention system focused on stormwater harvesting in brazil," **Journal of Environmental Engineering**, vol. 147, no. 12, p. 04021058, 2021, https://doi.org/10.1061/(ASCE)EE.1943-7870.0001938

15. Jochelavicius, V., E. M. Mendiondo, M. N. Gomes Jr., and M. B. de Macedo, "Construção de curvas Intensidade-Duração-Frequência com cenários futuros de mudanças climáticas para a cidade de São Carlos - SP visando ao dimensionamento de técnicas compensatórias," **Revista DAE**, vol. 147, p. 19-32, DOI: https://doi.org/10.36659/dae.2022.065

Publications in Conferences

Conference Proceedings

1. M. N. Gomes Jr., Giacomoni, M.H., Taha, A.F. and Mendiondo, E.M., 2022, August. Model Predictive Control for Stormwater Reservoirs: Investigating Effects of Climate Change and Urbanization. **IEEE Conference on Control Technology and Applications (CCTA)** (pp. 691-698). IEEE.

2. M. N. Gomes Jr., C. A. F. do Lago, M. H. Giacomoni, E. M. Mendiondo, "Expanding the 2-Dimentional Green-Ampt and Non-linear Reservoir Hydrological Model from SWMM to MATLAB®", **AGU Fall Meeting**, 2021.

3. M. N. Gomes Jr., M. H. Giacomoni, E. M. Mendiondo, A. F. Taha, "Real-Time Control of Stormwater Reservoirs for Flood Risk Mitigation", **The 2nd International Symposium on Water System Operations, 2021**.

4. M. N. Gomes Jr., P. A. Braga, M. B. de Macedo, E. M. Mendiondo, "Preliminary design of detention ponds using specific design discharge and orifice stage discharge relationship for different climate patterns", **Simpósio Brasileiro de Recursos Hídricos, 2021**.

5. M. N. Gomes Jr., P. A. Braga, E. M. Mendiondo, "Impacto das alterações pluviométricas no reservatório de detenção do Pacaembu-SP: avaliação da segurança hídrica quanto ao risco de cheias", **Simpósio Brasileiro de Recursos Hídricos, 2019** (In Portuguese).

6. M. N. Gomes Jr., E. M. Mendiondo, F. Dornelles, A. T. Papagiannakis, "Permeable Pavement Hydrological Model to Assess the Long-Term Efficiency of Maintenance Using High-Resolution Temperature and Rainfall Data", **World Environmental and Water Resources Congress**, 2021, 1103-1117.

7. M. N. Gomes Jr., E. O. Pavan, L. M. C. Rápallo, M. H. Giacomoni, E. M. Mendiondo, "Modelo Hidrodinâmico e de Qualidade da Água Bidirecional (2DCAWQ): Desafios de Modelagem em Bacias com Dados Escassos: Aplicação na Bacia do Tijuco Preto - São Carlos", **XIV Encontro Nacional de Águas Urbanas e IV Simpósio de Revitalização de Rios Urbanos**, 2022 (In Portuguese).

8. M. N. Gomes Jr., M. H. Giacomoni, E. M. Mendiondo, "The role of raster resolution into overland flow and total suspended solids modeling in small urban catchments", **Simpósio Brasileiro de Recursos Hídricos**, (2021).

9. M. N. Gomes Jr., M. H. Giacomoni, A. T. Papagiannakis, "Spatial Assessment of Overland Flow, Pollutant Concentration, and First Flush Using a 2D Non-Point Source Pollution and Hydrological Model for Urban Catchments", **World Environmental and Water Resources Congress**, 2021, 397-413.

10. M. N. Gomes Jr., M. H. Giacomoni, E. M. Mendiondo, "Dimensionamento de Biorretenções via Simulação Baseada em Processos: Modelo Generalizável (TC-Hydro) Aplicado em Condições Típicas de Projeto", **XIV Encontro Nacional de Águas Urbanas e IV Simpósio de Revitalização de Rios Urbanos**, 2022 (In Portuguese).

11. M. N. Gomes Jr., T. R. de Oliveira, T. H. Olveira, M. B. de Macedo, M. H. Giacomoni, E. M. Mendiondo, "Nature-based solutions for sustainable stormwater: a model approach and sensitivity analysis for bioretention design using Green and Ampt and reservoir flood routing", **Second International Conference of Water, Megacities, and Global Change, UNESCO**, 2021.

12. M. N. Gomes Jr., L. M. C. Rápalo, E. M. Mendiondo, A Serious Game for societal risk perception of dam-break flood assessment using a hydrodynamic model, **Latin American Hydraulic Congress**, (2022). *Award of Best Paper.*

13. M. N. Gomes Jr., C. A. F do Lago, M. H. Giacomoni, E. M. Mendiondo, Assessing the role of cross-section shape for flood routing under compound flood events using a hydrodynamic model, **Latin American Hydraulic Congress**, (2022).

Conference Proceedings

14. C. A. F. do Lago, M. N. Gomes Jr., E. M. Mendiondo, M. H. Giacomoni, "Application of Artificial Neural Networks to Predict Water Surface Elevation", **AGU Fall Meeting, 2021**.

15. T. R. P. de Oliveira, M. N. Gomes Jr., M. B. de Macedom, E. M. Mendiondo, "Análise da sensibilidade do potencial matricial em protótipo de biorretenção", **Simpósio Brasileiro de Recursos Hídricos**, 2019 (In Portuguese).

16. CASTRO, M.A.R.A.; GOMES Jr., M.N.; SANCHEZ, M.H.; FILHO, P.B.S., MENDIONDO, E.M. Revisão de Índice de Risco Aplicado à Simulação de Rompimento de Barragem no Brasil. **XXV Simpósio Brasileiro de Recursos Hídricos**. Anais. Aracaju (SE), 2023 (In Portuguese).

17. SANCHEZ, M.H; GOMES Jr., M.N.; CASTRO, M.A.R.A.; MENDIONDO, E.M. River flow forecasting methods: A review. **XXV Simpósio Brasileiro de Recursos Hídricos**. Anais. Aracaju (SE), 2023.

18. M. R. de Sousa, M. N. Gomes Jr., E. O. Pavan, L. M. C. Rápalo, F. A. R. Nararro, E. M. Mendiondo, "MODELAGEM DISTRIBUÍDA FISICAMENTE BASEADA EM BACIAS URBANAS: MODELO HYDROPOL2D APLICADO À SÃO CARLOS (SP)", **XXV Simpósio Brasileiro de Recursos Hídricos**. Proceedings. Aracaju (SE), 2023 (In Portuguese).

19. E. O. Pavan, M. N. Gomes Jr., L. M. C. Rápalo, M. R. de Sousa, M. S. dos Santos F. A. R. Nararro, E. M. Mendiondo, "MODELAGEM FISICAMENTE BASEADA EM GRANDES BACIAS ? DESAFIOS E OPORTUNIDADES DE APLICAÇÃO DO MODELO HYDROPOL2D", **XXV Simpósio Brasileiro de Recursos Hídricos**. Proceedings. Aracaju (SE), 2023 (In Portuguese).

20. L. F. Roysen, M. N. Gomes Jr., E. O. Pavan, E. M. Mendiondo, "MODELO RTC-STORMWATER: AVANÇOS NA MODELAGEM DE INUNDAÇÕES E CONTROLE DE DISPOSITIVOS DE DRENAGEM URBANA", **XXV Simpósio Brasileiro de Recursos Hídricos**. Proceedings. Aracaju (SE), 2023 (In Portuguese).

21. A. S. Ballarin, J. G. S. M. Uchoa, M. S. dos Santos, A. Almagro, I. P. Miranda, P. G. C. da Silva, G. J. da Silva, M. N. Gomes Jr., E. C. Wendland, P. T. S. de Oliveira, "O FUTURO DA SEGURANÇA HÍDRICA NO BRASIL: SEPARANDO OS IMPACTOS DAS MUDANÇAS CLIMÁTICAS E DA DEMANDA HÍDRICA", **XXV Simpósio Brasileiro de Recursos Hídricos**. Proceedings. Aracaju (SE), 2023 (In Portuguese).

22. M. S. dos Santos, M. N. Gomes Jr., D. A. Bressianim L. L. Ladeira, M. R. Benso, E. M. Mendiondo "REVISÃO DA IMPLEMENTAÇÃO DE MODELOS PREDITIVOS DE CONTROLE (MPC) À RESERVATÓRIOS URBANOS", **XXV Simpósio Brasileiro de Recursos Hídricos**. Proceedings. Aracaju (SE), 2023 (In Portuguese).

23. G. M. e Silva, M. R. Benso, P. G. C. da Silva, M. N. Gomes Jr., E. M. Mendiondo, "SERIOUS GAME SOBRE RISCOS HÍDRICOS PARA A SAÚDE PLANETÁRIA: NOVO MODELO DE CO-PRODUÇÃO DE CONHECIMENTO", **XXV Simpósio Brasileiro de Recursos Hídricos**. Proceedings. Aracaju (SE), 2023 (In Portuguese).

24. L. M. C. Rápalo, M. N. Gomes Jr., D. A. Bressiani, M. R. Benso, E. M. Mendiondo "THREATS OF URBAN FLASH FLOODS ON HUMAN STABILITY FOR THE NEXT CENTURY", **XXV Simpósio Brasileiro de Recursos Hídricos**. Proceedings. Aracaju (SE), 2023.

25. I. M. Benites, M. N. Gomes Jr., A. Botari, J. C. Botari, L. Vanalli, "Análise do Sistema de Drenagem Urbana: Estudo de caso das Galerias de Águas Pluviais da intersecção da Rua Governador Nei Braga com a Avenida Brasil na cidade de Umuarama–PR", **XVII Safety, Health and Environment World Congress**, 2017 (In Portuguese).

Fields and Keywords of Interest

Civil and Enviromental Engineering	Flood Control, Water Quality Transport and Fate, Hydrodynamic Models, System Analysis, Water Resources Planning and Management
Electrical Engineering	Linear Systems and Control, Control of Non-Linear Systems, Model Predictive Control, Linear Quadratic Regulators
Mathematics	Numerical Modeling, Explicit Methods, Finite-Difference Methods, GPU Processing, Optimization

Extra Activities

I run a website and a Youtube channel with content of Civil and Environmental Engineering (In Portuguese) and I plan to translate them to english in the near future. I developed more than 60 numerical tools to aid in various engineering calculations such as: design of pipes, design concrete structures, solve hydrology and hydraulics problems, etc. I also write some articles there that are top-ranked in Brazilian search engine optimization. Website available at: www.engenheiroplanilheiro.com.br.

Scholarships

Ph.D Degree at UTSA	Financed by the City of San Antonio - Texas ($ 153,000 USD). Project - Demonstrating the Environmental Benefits of Permeable Paved Surfaces over the Edwards Aquifer
Ph.D. Degree at USP	Ph.D. Schorlarship by CAPES (R$ 74,400)
M.Sc. Degree	Master's degree scholarship financed by FAPESP (R$ 58,116)
Bsc. Degree	Free Tuition by State University Schoorlarship

Reviewer for Scientific Journals

2021-present	*Journal of Water Resources Planning and Management*
2021-present	*Journal of Hydrology*
2022-present	*Hydrological Sciences Journal*
2020-present	*Journal of Hydrologic Engineering*
2020-present	*Revista Brasileira de Recursos Hídricos*
2020-present	*Revista DAE*
2021-present	*Revista REGA*

Professional Memberships

- American Society of Civil Engineering (ASCE) - 2020-2021
- American Geophysical Union (AGU) - 2021-2022
- Brazilian Water Resources Association (ABRH) 2019-2020, 2021-2022.

Grant Writing Collaboration

○ **Analysis of Unit Hydrograph Models for San Antonio Watersheds**
  - **P.I** - Dr. Marcio H. Giacomoni
  - **Tasks:** I helped to define the methods used to systematically assess the best unit hydrograph theory used for San Antonio observed data. The idea is that the standard PRF 484 unit hydrograph was oversizing the detention ponds in the city. Therefore, investigating the best-fitted unit hydrograph would reduce associated costs of low-impact development designs.

○ **Curbing Climate Change-Induced Floods via N Control Theory for Urban Drainage Systems**
  - **P.I's** - Dr. Marcio H. Giacomoni and Dr. Ahmad F. Taha
  - **Tasks:** Our previous research was the starting point of this proposal. We developed a real-time control model that can potentially increase the efficiency of stormwater systems for flood control. In this proposal, we plan to advance the mathematical modeling to include new stormwater systems (e.g., tunnels, dividers) and actuators (e.g., pumps and gates) to optimally control floods via real-time optimization.

○ **Collaborative Research: Feedback Control of Air and Water Pressure in Pipelines and Networks: Coupling Water Operation Modeling with Smart Valves**
  - **P.I's** - Dr. Marcio H. Giacomoni, Dr. Jose G. Vasconcelos, Dr. Ahmed A. Abokifa, and Dr. Ahmad F. Taha.
  - **Tasks:** I collaborated in the mathematical description of the hydraulic conceptualization of the filling pipe problem, defining the governing equations, and reviewing the methodology.

Current Collaborators

Peter Troch, Ph.D	Professor at University of Arizona. Google Scholar, Website.
Ahmad F. Taha, Ph.D	Associate Professor at Vanderbilt University. Google Scholar, Twitter, Website.
Eduardo Mario Mendiondo, Ph.D	Associate Professor at University of Sao Paulo, Sao Carlos School of Engineering. Orcid, Google Scholar.
José Vasconcelos, Ph.D	Professor at Auburn University. Google Scholar.
Marcio H. Giacomoni, Ph.D, P.E.	Associate Professor at University of Texas at San Antonio. Orcid, Google Scholar, Website.
Paulo T.S. Oliveira, Ph.D	Associate Professor at Federal University of Campo Grande. Orcid, Google Scholar, Twitter, Website.

Marina B. de Macedo, Ph.D	Associate Professor at Federal University of Itajubá. Orcid, Google Scholar, Website.
A. T. Papagiannakis, Ph.D, P.E.	Professor at University of Texas at San Antonio. Orcid, Google Scholar, Website.
César Ambrogi Ferreira do Lago, Ph.D.	University of Texas at San Antonio. Orcid, Google Scholar.
Daniele Bresisani, Ph.D	Associate Professor at Federal University of Pelotas. Orcid, Google Scholar, Website.
Luis Miguel Castillo Rápalo, Ph.D. Candidate	University of Sao Paulo, Sao Carlos School of Engineering. Orcid, Google Scholar.
Fabricio A. Richmond Navarro , Ph.D. Canddiate	University of Sao Paulo, Sao Carlos School of Engineering. Orcid, Google Scholar.
Tiantian Zhou, Ph.D	University of Arizona. Google Scholar.

Languages

Portuguese	Native Speaker
English	English (TOEFL - Advanced). Lived two years in the US from January 2020 to January 2022. Ph.D. dissertation written in English, publications and presentations in English. Currently living in the U.S. for the postdoctoral researching.
Spanish	Intermediate Knowlegdment

Graduate Research Collaborations

César Ambrogi Ferreira do Lago, Ph.D.

Jan/2018 - Present

○ During Cesar's Ph.D. at the University of Texas at San Antonio, we worked together creating hydrodynamic models. Cesar also worked with me at the beginning of the development of the HydroPol2D model.

Marina Batalini de Macedo, Ph.D.

Jan 2018 - Present

○ We have been working since the beginning of my Master's degree in varied topics related to floods, water quality, and Low Impact Development.

Luis Miguel Castilo Rápalo, Ph.D. Candidate

Jan 2022 - present

○ We have been working on at least 3 papers together. His thesis is the first Ph.D. to apply the HydroPol2D model. His 3 Ph.D. chapters are applications and new developments of the HydroPol2D model. We are also working on different problems, such as Real-Time control of storwmater facilities.

Ivan Cuervo, M.Sc.

Mar 2022 - Jan 2023

○ During his Master's at UTSA, Ivan worked with me on data collection and water quality analysis. We also collaborated in the design of permeable pavements and modeling of 2-D runoff distribution.

Artur Brasil, Ph.D Student

Jan 2022 - Present

○ We share the same project at UTSA. I stayed in UTSA for 2 years, and then Artur will finish the last 2 years of the project. We have collaborated in multiple areas, such as setting up field experiments, analyzing field data, and developing numerical models.

Mateo Hernandez, Master Student

Apr 2023 - Present

○ Mateo has worked with me by helping me to compare HyProSWE Model with HEC-RAS 1-D Model.

Undergraduate Research Collaborations

Enrico Pavan Oliveira, Civil Engineering

Jun 2022 - 2023

○ Enrico's undergraduate research project funding was granted by a research project written by me. He is under my supervision, and we are working on large-scale hydrodynamic modeling of a 100.000 km^2 watershed through a distributed model developed here.

Lucas Fujikawa Roysen, Civil Engineering

Jun 2022 - 2023

○ Lucas' undergraduate research project funding was granted by a research project written by me. He is under my supervision, and we are working towards the application of a Real-Time flood control model in a watershed in Sao Paulo - Brazil. This model simulates hydrodynamics in watersheds, reservoirs, and channels and optimally controls the valves and gates in a reservoir so that the flow performance index is maximized. He is applying the model developed here.

Milena, Environmental Engineering

Jun 2022 - 2023

- Milena's undergraduate research project funding was granted by a research project written by me. She is under my supervision, and we are working towards the application of a HydroPol2D in a poorly-gauged city - São Carlos/Brazil. This model simulates the hydrodynamics of watersheds, and pollutant transport and fate in a 2-D domain. She is applying the model developed here.

Vivian Jochelavicius, Civil Engineering

Jan 2019 - Dec 2019

- Vivian's undergraduate research project refreshed the Sao Carlos Intensity Duration Frequency curve for scenarios of climate change. We have collaborated in developing these curves.

Professional References

- **Ahmad F. Taha**
  - Associate Professor at Vanderbilt University
  - ahmad.taha@vanderbilt.edu
  - Civil and Environmental Engineering
- **Marcio H. Giacomoni**
  - Associate Professor at University of Texas at San Antonio
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