

RICHARD VASQUES

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Department of Mechanical & Aerospace Engineering ◊ The Ohio State University
E431 Scott Laboratory ◊ 201 W. 19th Avenue ◊ Columbus, OH 43210

EDUCATION

- Ph.D. Applied & Interdisciplinary Mathematics** **2009**
(**Nuclear Engineering** as partner interdisciplinary discipline)
University of Michigan, Ann Arbor, MI
Dissertation: *Anisotropic Diffusion of Neutral Particles in Stochastic Media*
Advisors: Prof. Edward W. Larsen (Nuclear Engineering)
Prof. Charles R. Doering (Applied Mathematics)
- M.S. Applied Mathematics** **2005**
Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil
Thesis: *A Review of Particle Transport Theory in a Binary Stochastic Medium*
Advisors: Prof. Marco T. Vilhena (Applied Mathematics)
Prof. Edward W. Larsen (Nuclear Engineering)
- B.S. Applied & Computational Mathematics** **2002**
Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil
Advisor: Prof. Cynthia F. Segatto

EMPLOYMENT

- **The Ohio State University** Sep. 2017 - present
Assistant Professor of Nuclear Engineering
Nuclear Engineering Graduate Program, Columbus, OH
Department of Mechanical & Aerospace Engineering
- **University of California, Berkeley** June 2015 - Aug. 2017
Assistant Project Scientist
Department of Nuclear Engineering, Berkeley, CA
- **Universidade Federal do Rio Grande do Sul** July 2014 - May 2015
Research Fellow
Department of Mechanical Engineering, Porto Alegre, Brazil
- **RWTH Aachen University** Aug. 2012 - July 2014
Wissenschaftlicher Mitarbeiter
Center for Computational Engineering Science, Aachen, Germany
- **Fundação Getulio Vargas** Mar. 2011 - July 2012
Assistant Professor
Escola de Administração de Empresas de São Paulo, São Paulo, Brazil
- **McKinsey & Company** Oct. 2009 - Feb. 2011
Associate Consultant
São Paulo, Brazil
- **University of Michigan** Sep. 2008 - Dec. 2008
Graduate Student Instructor Sep. 2007 - Dec. 2007
Department of Mathematics, Ann Arbor, MI Sep. 2006 - Dec. 2006
Sep. 2005 - Dec. 2005

• Refereed Journal Publications (J)

(* Indicates advisee at the time of work)

- J28.** L.R.C. Moraes, R.C. Barros, H. Alves Filho, R. Vasques. “A methodology for estimating the ensemble-averaged effective multiplication factor and neutron scalar flux profile in statistically homogeneous random media using a slab-geometry, discrete ordinates and energy multigroup nonclassical neutral particle transport model.” *Nuclear Science and Engineering*, 1–24 (2025).
doi: [10.1080/00295639.2025.2580706](https://doi.org/10.1080/00295639.2025.2580706).
- J27.** L.R.C. Moraes*, R.C. Barros, H. Alves Filho, R. Vasques. “A nonclassical model to eigenvalue neutron transport calculations.” *Annals of Nuclear Energy* **216**: 111250 (2025).
doi: [10.1016/j.anucene.2025.111250](https://doi.org/10.1016/j.anucene.2025.111250).
- J26.** G.A. Lorensi*, L.R.C. Moraes*, R. Vasques, E. Sauter, F.S. Azevedo. “On the application of the Nyström method to two-dimensional neutral particle transport problems in heterogeneous media.” *Nuclear Science and Engineering* **199**: S235–S248 (2025).
doi: [10.1080/00295639.2024.2342498](https://doi.org/10.1080/00295639.2024.2342498).
- J25.** Z.T. Condon*, D. Siefman, P. Maggi, P. Witter, R. Vasques. “Introduction, investigation, and experimental validation of a novel Passive Neutron Spectrometer.” *Nuclear Science and Engineering*, **199**: 1546–1562 (2025).
doi: [10.1080/00295639.2025.2458437](https://doi.org/10.1080/00295639.2025.2458437).
- J24.** E.W. Larsen, T.M. Paganin*, R. Vasques. “A ‘consistent’ quasidiffusion method for solving particle transport problems.” *Nuclear Science and Engineering*, **199**: 793–802 (2025).
doi: [10.1080/00295639.2024.2392942](https://doi.org/10.1080/00295639.2024.2392942).
- J23.** L.R.C. Moraes*, R.C. Barros, R. Vasques. “Generating optimal configurations for neutron source distribution in subcritical systems. A linear-programming approach.” *Annals of Nuclear Energy* **208**: 110718 (2024).
doi: [10.1016/j.anucene.2024.110718](https://doi.org/10.1016/j.anucene.2024.110718).
- J22.** S.A. Agbo*, L.R.C. Moraes*, R. Vasques. “On the use of spherical harmonic approximations in nonclassical particle transport problems.” *Journal of Quantitative Spectroscopy and Radiative Transfer* **324**: 109048 (2024).
doi: [10.1016/j.jqsrt.2024.109048](https://doi.org/10.1016/j.jqsrt.2024.109048).
- J21.** L.R.C. Moraes*, J.K. Patel, R.C. Barros, R. Vasques. “A hybrid analytical discrete ordinates-response matrix constant nodal method for one-speed x,y-geometry transport problems.” *Progress in Nuclear Energy* **168**: 104985 (2024).
doi: [10.1016/j.pnucene.2023.104985](https://doi.org/10.1016/j.pnucene.2023.104985).
- J20.** L.R.C. Moraes*, R.C. Barros, R. Vasques. “On a response matrix solver for slab-geometry neutral particle transport problems in the discrete ordinates and energy multigroup formulations considering non-uniform interior sources.” *Journal of Computational and Theoretical Transport* **52**: 55–77 (2023).
doi: [10.1080/23324309.2023.2194294](https://doi.org/10.1080/23324309.2023.2194294).
- J19.** L.R.C. Moraes*, R. Vasques, R.C. Barros. “On the occurrence of linearly dependent eigenvectors in nonclassical transport calculations.” *Journal of Quantitative Spectroscopy and Radiative Transfer* **295**: 108407 (2023).
doi: [10.1016/j.jqsrt.2022.108407](https://doi.org/10.1016/j.jqsrt.2022.108407).

- J18.** L.R.C. Moraes*, J.K. Patel*, R.C. Barros, R. Vasques. “An improved spectral approach for solving the nonclassical neutral particle transport equation.” *Journal of Quantitative Spectroscopy and Radiative Transfer* **290**: 108282 (2022).
doi: [10.1016/j.jqsrt.2022.108282](https://doi.org/10.1016/j.jqsrt.2022.108282).
- J17.** L.R.C. Moraes, L.B. Barichello, R.C. Barros, R. Vasques. “On the application of the analytical discrete ordinates method to the solution of nonclassical transport problems in slab geometry.” *Journal of Computational Physics* **455**: 110982 (2022).
doi: [10.1016/j.jcp.2022.110982](https://doi.org/10.1016/j.jcp.2022.110982).
- J16.** J.K. Patel*, L.R.C. Moraes, R. Vasques, R.C. Barros. “Transport synthetic acceleration for the solution of the one-speed nonclassical spectral S_N equations in slab geometry.” *Journal of Computational and Applied Mathematics* **401**: 113768 (2022).
doi: [10.1016/j.cam.2021.113768](https://doi.org/10.1016/j.cam.2021.113768).
- J15.** J.J. Kuczek*, J.K. Patel*, R. Vasques. “Modified Fokker-Planck acceleration for forward-peaked transport problems in slab geometry.” *Journal of Computational and Theoretical Transport* **50**: 430–453 (2021).
doi: [10.1080/23324309.2021.1894174](https://doi.org/10.1080/23324309.2021.1894174).
- J14.** R.K. Palmer*, R. Vasques. “Asymptotic derivation of the simplified P_N equations for nonclassical transport with anisotropic scattering.” *Journal of Computational and Theoretical Transport* **49**: 331–348 (2020).
doi: [10.1080/23324309.2020.1816552](https://doi.org/10.1080/23324309.2020.1816552).
- J13.** R. Vasques, L.R.C. Moraes, R.C. Barros, R.N. Slaybaugh. “A spectral approach for solving the nonclassical transport equation.” *Journal of Computational Physics* **402**: 109078 (2020).
doi: [10.1016/j.jcp.2019.109078](https://doi.org/10.1016/j.jcp.2019.109078).
- J12.** I. Makine*, R. Vasques, R.N. Slaybaugh. “Exact transport representations of the classical and nonclassical simplified P_N equations.” *Journal of Computational and Theoretical Transport* **47**: 326–349 (2018).
doi: [10.1080/23324309.2018.1496938](https://doi.org/10.1080/23324309.2018.1496938).
- J11.** R. Vasques, K. Krycki, R.N. Slaybaugh. “Nonclassical particle transport in one-dimensional random periodic media.” *Nuclear Science and Engineering* **185**: 78–106 (2017).
doi: [10.13182/NSE16-35](https://doi.org/10.13182/NSE16-35).
- J10.** M. Wollmann da Silva, R. Vasques, B.E.J. Bodmann, M.T. Vilhena. “A nonstiff solution for the stochastic neutron point kinetics equations.” *Annals of Nuclear Energy* **97**: 47–52 (2016).
doi: [10.1016/j.amucene.2016.06.026](https://doi.org/10.1016/j.amucene.2016.06.026).
- J9.** R. Vasques. “The nonclassical diffusion approximation to the nonclassical linear Boltzmann equation.” *Applied Mathematics Letters* **53**: 63–68 (2016).
doi: [10.1016/j.aml.2015.10.003](https://doi.org/10.1016/j.aml.2015.10.003).
- J8.** M. Frank, K. Krycki, E.W. Larsen, R. Vasques. “The nonclassical Boltzmann equation, and diffusion-based approximations to the Boltzmann equation.” *SIAM Journal on Applied Mathematics* **75**: 1329–1345 (2015).
doi: [10.1137/140999451](https://doi.org/10.1137/140999451).
- J7.** R. Vasques, N.K. Yadav*. “Adjusted Levermore-Pomraning equations for diffusive random systems in slab geometry.” *Journal of Quantitative Spectroscopy & Radiative Transfer* **154**: 98–112 (2015).
doi: [10.1016/j.jqsrt.2014.12.012](https://doi.org/10.1016/j.jqsrt.2014.12.012).

- J6.** R. Vasques, E.W. Larsen. “Non-classical particle transport with angular-dependent path-length distributions. II: Application to pebble bed reactor cores.” *Annals of Nuclear Energy* **70**: 301–311 (2014).
doi: [10.1016/j.anucene.2013.12.020](https://doi.org/10.1016/j.anucene.2013.12.020).
- J5.** R. Vasques, E.W. Larsen. “Non-classical particle transport with angular-dependent path-length distributions. I: Theory.” *Annals of Nuclear Energy* **70**: 292–300 (2014).
doi: [10.1016/j.anucene.2013.12.021](https://doi.org/10.1016/j.anucene.2013.12.021).
- J4.** R. Vasques. “Nuclear energy is renewable energy.” *Energy Research Journal* **5**: 33–34 (2014).
doi: [10.3844/erjsp.2014.33.34](https://doi.org/10.3844/erjsp.2014.33.34).
- J3.** E.W. Larsen, R. Vasques. “A generalized linear Boltzmann equation for non-classical particle transport.” *Journal of Quantitative Spectroscopy & Radiative Transfer* **112**: 619–631 (2011).
doi: [10.1016/j.jqsrt.2010.07.003](https://doi.org/10.1016/j.jqsrt.2010.07.003).
- J2.** A.V. Cardona, R. Vasques, M.T. Vilhena. “Uma nova versão do método LTA_n.” *TEMA: Trends in Computational and Applied Mathematics* **5**: 49–54 (2004).
doi: [10.5540/tema.2004.05.01.0049](https://doi.org/10.5540/tema.2004.05.01.0049).
- J1.** J.R. Zabadal, R. Vasques, A. Haag, C.F. Segatto. “Simulação da dispersão de poluentes em meio aquático usando álgebra de Lie.” *Ciência & Natura Special*: 145–156 (2002).
doi: [10.5902/2179460X63628](https://doi.org/10.5902/2179460X63628).

• **Refereed Conference Proceedings and Transactions (P)**

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| (| * Indicates advisee at the time of work; | # Indicates a journal paper followed; |
| | ‡ Indicates full paper peer review; | ◇ Indicates a poster presentation; |
| | † Indicates abstract/summary peer review; | <u>Conference presenter is underlined.</u> |

- P43.** L.R.C. Moraes*, R.C. Barros, H. Alves Filho, R. Vasques. “Estimating the ensemble-average effective multiplication factor and neutron scalar flux profile in statistically homogeneous random media using a nonclassical model.” *Proceedings of International Conference on Mathematics & Computational Methods Applied to Nuclear Science & Eng.*, Denver, CO, April 2025. ‡ #
- P42.** T.M. Paganin*, R. Vasques, E.W. Larsen. “Particle transport acceleration with ‘consistent’ Eddington factors”. *Proceedings of International Conference on Mathematics & Computational Methods Applied to Nuclear Science & Engineering*, Denver, CO, April 2025. ‡
- P41.** L.R.C. Moraes*, R.C. Barros, R. Vasques. “Calculating the expected effective multiplication factor and neutron scalar flux profile in statistically homogeneous random media using a non-classical model.” *2024 International Nuclear Atlantic Conference, XXIII Meeting on Nuclear Reactor Physics and Thermal Hydraulics*, Rio de Janeiro, Brazil, May 2024. ‡◇
- P40.** S.A. Agbo*, L.R.C. Moraes*, R. Vasques. “Derivation of spherical harmonic approximations to the nonclassical particle transport equation.” *Proceedings of International Conference on Mathematics & Computational Methods Applied to Nuclear Science & Engineering*, Niagara Falls, Canada, August 2023. ‡#
- P39.** Z. Condon*, D. Siefman, R. Vasques. “Using machine learning to unfold neutron spectra with a passive neutron spectrometer.” *Proceedings of International Conference on Mathematics & Computational Methods Applied to Nuclear Science & Engineering*, Niagara Falls, Canada, August 2023. ‡#
- P38.** L.S. Enomoto*, H. Alves Filho, R. Vasques. “Derivation of a multigroup diffusion equation for nonclassical problems.” *Proceedings of International Conference on Mathematics & Computational Methods Applied to Nuclear Science & Engineering*, Niagara Falls, Canada, August 2023. ‡◇

- P37.** E.W. Larsen, T.M. Paganin^{*}, R. Vasques. “A “consistent” quasidiffusion method for iteratively solving particle transport problems.” *Proceedings of International Conference on Mathematics & Computational Methods Applied to Nuclear Science & Engineering*, Niagara Falls, Canada, August 2023. ‡#
- P36.** L.R.C. Moraes^{*}, R.C. Barros, R. Vasques. “A linear programming-based methodology to determine the minimal neutron source distribution in subcritical systems.” *Proceedings of International Conference on Mathematics & Computational Methods Applied to Nuclear Science & Engineering*, Niagara Falls, Canada, August 2023. ‡#
- P35.** T.M. Paganin^{*}, S. Schunert, L.R.C. Moraes^{*}, R. Vasques. “An initial study of the convergence rate of Griffin’s pebble bed reactors algorithm.” *Proceedings of International Conference on Mathematics & Computational Methods Applied to Nuclear Science & Engineering*, Niagara Falls, Canada, August 2023. ‡
- P34.** A.S. Silva^{*}, L.R.C. Moraes^{*}, R.C. Barros, R. Vasques. “ P_1 synthetic acceleration and convergence analysis for the solution of one-speed nonclassical spectral S_N equations in slab geometry.” *Proceedings of International Conference on Mathematics & Computational Methods Applied to Nuclear Science & Engineering*, Niagara Falls, Canada, August 2023. ‡
- P33.** L.R.C. Moraes, R.C. Barros, R. Vasques. “A review of the deterministic solution of nonclassical transport problems.” *2021 International Nuclear Atlantic Conference - INAC 2021*, Virtual Meeting, Brazil, November 2021. ‡
- P32.** R.K. Palmer^{*}, R. Vasques. “The nonclassical simplified P_2 and P_3 equations with anisotropic scattering.” *Proceedings of International Conference on Mathematics & Computational Methods Applied to Nuclear Science & Engineering*, Raleigh, NC, October 2021. ‡
doi: [10.13182/M&C21-33637](https://doi.org/10.13182/M&C21-33637)
- P31.** J.K. Patel^{*}, J.J. Kuczek^{*}, R. Vasques. “One-way coupled tumor response model for combined-hyperthermia-radiotherapy treatment with anisotropic scattering.” *Transactions of the American Nuclear Society* **121**: 65–68 (2019). ‡
doi: [10.13182/T31123](https://doi.org/10.13182/T31123)
- P30.** B.D. Ganapol, J.K. Patel^{*}, R. Vasques. “One-way coupled benchmark for combined-hyperthermia-radiotherapy treatment in slab geometry.” *Proceedings of 26th ICTT: International Conference on Transport Theory*, Paris, France, September 2019. †
- P29.** J.K. Patel^{*}, J.J. Kuczek^{*}, R. Vasques. “Nonlinear Fokker-Planck acceleration for forward-peaked transport problems in slab geometry.” *Proceedings of 26th ICTT: International Conference on Transport Theory*, Paris, France, September 2019. †#
- P28.** J.K. Patel^{*}, L.R.C. Moraes, R. Vasques, R.C. Barros. “ P_1 synthetic acceleration for nonclassical spectral S_N equations in slab geometry.” *Proceedings of 26th ICTT: International Conference on Transport Theory*, Paris, France, September 2019. †◇
- P27.** R. Vasques, P.S. Brantley, R.K. Palmer^{*}. “A nonclassical Monte Carlo algorithm for transport problems in diffusive binary stochastic media.” *Proceedings of 26th ICTT: International Conference on Transport Theory*, Paris, France, September 2019. †
- P26.** R.K. Palmer^{*}, R. Vasques. “Asymptotic derivation of the simplified P_N equations for nonclassical transport with anisotropic scattering.” *Proceedings of 26th ICTT: International Conference on Transport Theory*, Paris, France, September 2019. †#
- P25.** J.K. Patel^{*}, R. Vasques, B.D. Ganapol. “Towards a multiphysics model for tumor response to combined-hyperthermia-radiotherapy treatment.” *Proceedings of International Conference on Mathematics & Computational Methods Applied to Nuclear Science & Engineering*, Portland, OR, August 2019. ‡

- P24.** J. Chen*, J.K. Patel*, R. Vasques. “Solver recommendation for transport problems in slabs using machine learning.” *Proceedings of International Conference on Mathematics & Computational Methods Applied to Nuclear Science & Engineering*, Portland, OR, August 2019. ‡◇
- P23.** I. Makine*, R. Vasques, R.N. Slaybaugh. “Exact transport representations of the classical and nonclassical simplified P_N equations.” *Proceedings of 25th ICTT: International Conference on Transport Theory*, Monterey, CA, October 2017. †#
- P22.** M. Wrenninge, R. Vasques, R.N. Slaybaugh. “A generalized volume rendering approach for computer graphics.” *Proceedings of 25th ICTT: International Conference on Transport Theory*, Monterey, CA, October 2017. †
- P21.** R. Vasques, R.N. Slaybaugh. “Simplified P_N equations for nonclassical transport with isotropic scattering.” *Proceedings of International Conference on Mathematics & Computational Methods Applied to Nuclear Science & Engineering*, Jeju, South Korea, April 2017. ‡
- P20.** R. Vasques, R.N. Slaybaugh, K. Krycki. “Nonclassical particle transport in the 1-D diffusive limit.” *Transactions of the American Nuclear Society* **114**: 361–364 (2016). ‡
- P19.** M. Wollmann da Silva, B.E.J. Bodmann, M.T. Vilhena, R. Vasques. “The solution of the neutron point kinetics equation with stochastic extension: an analysis of two moments.” *Proceedings of 7th International Nuclear Atlantic Conference*, São Paulo, Brazil, October 2015. ‡
- P18.** R. Vasques, K. Krycki. “Boundary conditions for the 1-D non-classical transport equation.” *Proceedings of 24th ICTT: International Conference on Transport Theory*, Taormina, Sicily, Italy, September 2015. †
- P17.** R. Vasques, K. Krycki. “On the accuracy of the non-classical transport equation in 1-D random periodic media.” *Proceedings of Joint International Conference on Mathematics and Computation, Supercomputing in Nuclear Applications and the Monte Carlo Method*, Nashville, TN, April 2015. ‡
- P16.** M. Schumann, R. Engels, M. Frank, J. Furltova, S. Furltov, A. Havenith, G. Kemmerling, J. Kettler, T. Klapdor-Kleingrothaus, E. Mauerhofer, O. Schitthelm, R. Vasques, D. Voß, M. Wilenbockel. “Fast neutron imaging with an aSi detector for nuclear waste assay.” *Proceedings of 25th SAAGAS: Seminar on Activation Analysis and Gamma Spectroscopy*, Aachen, Germany, February 2015. †
- P15.** M. Schumann, R. Engels, M. Frank, J. Furltova, A. Havenith, G. Kemmerling, J. Kettler, E. Mauerhofer, O. Schitthelm, R. Vasques. “Detector development for neutron imaging system for radioactive-waste analysis (NISRA) with 14 MeV neutrons.” *Proceedings of 10th World Conference on Neutron Radiography*, Grindelwald, Switzerland, October 2014. †◇
- P14.** R. Engels, M. Frank, J. Furltova, A. Havenith, G. Kemmerling, J. Kettler, E. Mauerhofer, O. Schitthelm, M. Schumann, R. Vasques, D. Voß. “Compact neutron imaging system for radioactive-waste analysis (NISRA).” *Proceedings of 10th World Conference on Neutron Radiography*, Grindelwald, Switzerland, October 2014. †◇
- P13.** M. Schumann, R. Engels, M. Frank, S. Furltov, J. Furltova, C. Genreith, A. Havenith, G. Kemmerling, J. Kettler, T. Krings, E. Mauerhofer, D. Neike, M. Rossbach, O. Schitthelm, R. Vasques, C. Carasco, E. Payan, B. Perot, J.-L. Ma. “Monte-Carlo application for nondestructive nuclear waste analysis.” *Proceedings of Joint International Conference on Supercomputing in Nuclear Applications + Monte Carlo*, Paris, France, October 2013. †◇
- doi:** [10.1051/snmc/201405123](https://doi.org/10.1051/snmc/201405123)

- P12.** J. Kettler, A. Havenith, D. Neike, E. Mauerhofer, G. Kemmerling, J. Furltova, M. Schumann, M. Frank, O. Schitthelm, R. Engels, R. Vasques, S. Furltov. “Compact neutron imaging system for the investigation of large and dense objects.” *Proceedings of 1st NINMACH: International Conference on Neutron Imaging and Neutron Methods in Archaeology and Cultural Heritage Research*, Garching, Germany, September 2013. †
- P11.** K. Krycki, R. Vasques. “Numerical schemes for a non-classical linear Boltzmann equation for transport through spatially correlated media.” *Proceedings of NumHyp: Numerical approximations of hyperbolic systems with source terms and applications*, Aachen, Germany, September 2013. †◇
- P10.** M. Schumann, R. Engels, M. Frank, S. Furltov, J. Furltova, C. Genreith, A. Havenith, G. Kemmerling, J. Kettler, T. Krings, E. Mauerhofer, D. Neike, M. Rossbach, O. Schitthelm, R. Vasques, C. Carasco, E. Payan, B. Perot, J.-L. Ma. “Zerstörungsfreie Charakterisierung Radioaktiver Abfälle.” *VKTA Workshop: Hürden und Fallstricke bei der Charakterisierung von Abfall-Gebinden*, Dresden, Germany, June 2013. †◇
- P9.** R. Vasques. “Estimating anisotropic diffusion of neutrons near the boundary of a pebble bed random system.” *Proceedings of International Conference on Mathematics and Computational Methods Applied to Nuclear Science & Engineering*, Sun Valley, ID, May 2013. ‡
- P8.** R. Engels, M. Frank, S. Furltov, J. Furltova, A. Havenith, G. Kemmerling, J. Kettler, E. Mauerhofer, D. Neike, O. Schitthelm, M. Schumann, R. Vasques. “Neutron imaging system for radioactive-waste analysis.” *Proceedings of 24 SAAGAS: Seminar on Activation Analysis and Gamma Spectroscopy*, Munich, Germany, February 2013. †◇
- P7.** R. Vasques, E.W. Larsen. “Anisotropic diffusion in model 2-D pebble-bed reactor cores.” *Proceedings of International Conference on Advances in Mathematics, Computational Methods, and Reactor Physics*, Saratoga Springs, NY, May 2009. ‡
- P6.** E.W. Larsen, R. Vasques, M.T. Vilhena. “Particle transport in the 1-D diffusive atomic mix limit.” *Proceedings of Mathematics and Computation, Supercomputing, Reactor Physics and Nuclear and Biological Applications*, Avignon, France, September 2005. ‡
- P5.** R. Vasques, M.T. Vilhena, M. Thompson, E.W. Larsen. “State of the art of particle transport theory in stochastic media.” *Proceedings of XXV CILAMCE: Iberian Latin American Congress on Computational Methods in Engineering*, Recife, Brazil, November 2004. ‡
- P4.** A.V. Cardona, R. Vasques. “Aumentando a eficiência computacional do método LTA_n .” *Proceedings of XXVI CNMAC: Congresso Nacional de Matemática Aplicada e Computacional*, São José do Rio Preto, Brazil, September 2003. †
- P3.** A.V. Cardona, R. Vasques, J.V.P. Oliveira. “Solução LTA_n para o problema de transporte em uma placa com uma fonte arbitrária e altas ordens de quadratura.” *Proceedings of XXVI CNMAC: Congresso Nacional de Matemática Aplicada e Computacional*, São José do Rio Preto, Brazil, September 2003. †
- P2.** A.V. Cardona, M.T. Vilhena, J.V.P. Oliveira, R. Vasques. “The one-dimensional LTA_n solution in a slab with high order of quadrature.” *Proceedings of 18th ICTT: International Conference on Transport Theory*, Rio de Janeiro, Brazil, July 2003. †◇
- P1.** R. Vasques, C.F. Segatto, M.T. Vilhena. “The LTS_n solution for the neutron transport equation in spherical geometry.” *Proceedings of 18th ICTT: International Conference on Transport Theory*, Rio de Janeiro, Brazil, July 2003. †◇

- **Refereed Book Chapters (C)**

C1. M. Wollmann da Silva, B.E.J. Bodmann, M.T. Vilhena, R. Vasques. “Influence of stochastic moments in the solution of the neutron point kinetics equation.” In: C. Constanda, A. Kirsch (eds.): *Integral Methods in Science and Engineering*, Springer: Birkhauser Basel, pp 613–624 (2015).

doi: [10.1007/978-3-319-16727-5_56](https://doi.org/10.1007/978-3-319-16727-5_56)

HONORS AND AWARDS

- **Michael J. Moran Excellence in Teaching Award**

May 2023

The Michael J. Moran Award for Excellence in Teaching recognizes faculty who have exhibited dedication and excellence in undergraduate teaching of mechanical engineering in the Department of Mechanical and Aerospace Engineering of The Ohio State University. This award is selected by the members of the Mechanical Engineering Advisory Board.

GRANTS AND FELLOWSHIPS

- **Funding (not including pending applications)**

- Brazilian Ministry of Science and Technology: CNPq - ‘Programa Conhecimento Brasil’ Research Grant
 - Title: Desenvolvimento de métodos numéricos para cálculos de transporte de partículas neutras segundo o modelo linear generalizado de Boltzmann com técnicas computacionais inovadoras
 - Role: PI (with R.C. Barros | UERJ, Brazil)
 - Period: Dec. 2024 - Dec. 2026
 - Total funds: \$416,777 BRL (Brazilian Real)
- Battelle Energy Alliance, LLC - US Department of Energy
 - Title: Idaho National Laboratory NUC activities with The Ohio State University
 - Role: Co-PI (with C. Smidts, P.I. | OSU)
 - Period: Nov. 2022 - Sep. 2024
 - Total funds: \$400,000 USD
- Brazilian Ministry of Education: CAPES-Print Research Grant
 - Title: Modelagem Computacional do Transporte Não-classico de Partículas Neutras
 - Role: PI (with R.C. Barros | UERJ, Brazil)
 - Period: Mar. 2019 - Feb. 2022 – extended to Oct. 2024
 - Funds: \$177,245 BRL (Brazilian Real)
- Nuclear Regulatory Commission: Faculty Development Program
 - Title: Nuclear Engineering Faculty Development
 - Role: PI (with T. Aldemir, P.I. | OSU)
 - Period: Sep. 2017 - Sep. 2020
 - Total funds: \$450,000 USD

- CNPq/Brazilian Ministry of Science and Technology: Advanced and Innovative Nuclear Reactors Research Grant
 - Title: Representação Analítica da Solução de Problemas de Cinética de Nêutrons Pontual: Efeito das Flutuações Estocásticas
 - Role: PI
 - Period: July 2014 - May 2015
 - Total funds: \$49,500.00 BRL (Brazilian Real)

• **Fellowships**

- Fulbright Doctoral Fellowship, U.S. Department of State (2005-2009)
- CNPq Doctoral Fellowship (declined), Ministry of Science and Technology, Brazil (2005)
- CNPq Masters Fellowship, Ministry of Science and Technology, Brazil (2003-2005)
- CAPES Masters Fellowship (declined), Ministry of Education, Brazil (2003)
- FAPERGS Scientific Initiation Fellowship, Rio Grande do Sul State Government, Brazil (2002)

****Travel and conference grants not listed****

SUPERVISED STUDENTS & RESEARCHERS

• **Postdoctoral Advisees**

- **Past**

3. Leonardo R.C. Moraes, *The Ohio State University* May 2022 - Apr. 2024
 D.Sc., M.S., and B.S. from State University of Rio de Janeiro, Brazil.
 Next Appointment: Professor at State University of Rio de Janeiro, Brazil.
2. Mehmet Türkmen, *The Ohio State University* June 2021 - Mar. 2022
 Ph.D., M.S., and B.S. from Hacettepe University, Ankara, Turkey.
 Next Appointment: Senior Nuclear Engineer/Neutronics Analyst at Idaho National Laboratory.
1. Japan K. Patel, *The Ohio State University* June 2018 - May 2020
 Ph.D. and M.S. from The University of New Mexico, Albuquerque; B.S. from Oregon State University.
 Next Appointment: Postdoctoral Research Fellow at the University of Michigan, Ann Arbor.

• **Ph.D. Advisees**

- **Current**

8. Lisa S. Enomoto, *Universidade do Estado do Rio de Janeiro, Brazil* Jan. 2021 - present
 (as co-advisor, with H. Alves Filho as advisor)
 6 months research with me at The Ohio State University as Exchange Scholar

- **Graduated**

7. Alan S. da Silva, *Universidade do Estado do Rio de Janeiro, Brazil* Jan. 2021 - Dec. 2025
 Doctor in Computational Modeling
 (as co-advisor, with R.C. Barros as advisor)
 6 months research with me at The Ohio State University as Exchange Scholar
 Dissertation: *P_1 synthetic acceleration and convergence analysis for the solution of the one-speed nonclassical spectral S_N equations in slab geometry.*
 Next Appointment: Postdoctoral Researcher at Universidade do Estado do Rio de Janeiro, Brazil

6. Tomás M. Paganin, *The Ohio State University* Jan. 2020 - May 2025
 Doctor in Nuclear Engineering
 (with co-advisor Edward W. Larsen)
 Dissertation: *Acceleration of particle transport iterations with ‘consistent’ Eddington factors*
 Next Appointment: Postdoctoral Researcher at the University of Illinois Urbana-Champaign.
5. Sunday A. Agbo, *The Ohio State University* Aug. 2020 - Dec. 2024
 Doctor in Nuclear Engineering
 Dissertation: *Derivation of Spherical Harmonic Approximations to the Nonclassical Particle Transport Equation*
 Next Appointment: Senior Nuclear Engineer at Holtec Palisades, MI.
4. Maj. Zachary T. Condon, *The Ohio State University* Aug. 2021 - Jul. 2024
 Doctor in Nuclear Engineering
 Dissertation: *Unfolding Neutron Energy Spectra with a Passive Neutron Spectrometer*
 Next Appointment: Assist. Prof. of Nuclear Eng. at Air Force Institute of Technology, Dayton, OH
3. Gustavo A. Lorensi, *Univ. Federal do Rio Grande do Sul, Brazil* Nov. 2022 - May 2024
 Doctor in Applied Mathematics
 (as co-advisor, with F.S. Azevedo as advisor)
 12 months research with me at The Ohio State University as Exchange Scholar
 Dissertation: *Nyström Method Applied to Two-dimensional Neutral Particle Transport Problems in Heterogeneous Media.*
 Next Appointment: Postdoctoral Researcher at Univ. Federal do Rio Grande do Sul, Brazil.
2. John J. Kuczek, *The Ohio State University* Aug. 2017 - Dec. 2021
 Doctor in Nuclear Engineering
 Dissertation: *A Fokker-Planck Acceleration Technique For Multiphysics Problems with Highly Forward-Peaked Scattering.*
 Next Appointment: Postdoctoral Researcher at Los Alamos National Laboratory.
1. Robert K. Palmer, *The Ohio State University* Jan. 2018 - Aug. 2020
 Doctor in Nuclear Engineering
 Dissertation: *Asymptotic Derivation of the Simplified P_N Equations for Nonclassical Transport with Anisotropic Scattering.*
 Next Appointment: Postdoctoral Researcher at The Ohio State University Research Reactor.

• M.S. Advisees

- Graduated

2. Ilker Makine, *University of California, Berkeley* Mar. 2017 - Sep. 2017
 and *Université Libre de Bruxelles, Belgium*
 (as co-advisor, with R.N. Slaybaugh as advisor)
 Thesis: *Exact Transport Representations of the Classical and Nonclassical Simplified P_N Equations with Isotropic Scattering.**
***This work received the ONDRAF/NIRAS Master Thesis Prize in collaboration with the Belgian Nuclear Society (BNS) - Young Generation (BNS-YG).**
 Next Appointment: Junior Nuclear Design Engineer, Tractebel - Engie Group, Belgium.
1. Nitin K. Yadav, *RWTH Aachen University, Germany* Sep. 2013 - Apr. 2014
 and *Indian Institute of Technology, Madras*
 (as co-advisor, with M. Frank as advisor)
 Thesis: *An Extended Closure for the Levermore-Pomraning Equations in Scattering Random Media.*
 Next Appointment: Ph.D. student at Eindhoven University of Technology, Netherlands.

- **Other Graduate Research Advisees**

- **Past**

2. Jinzhao Chen, *The Ohio State University* Aug. 2018 - Dec. 2018
Topic: *Machine Learning for Transport Solvers.*
1. Srikanth Gopalakrishnan, *RWTH Aachen University* Sep. 2013 - Feb. 2014
Topic: *Neutron Imaging System for Radioactive Waste Analysis.*

- **Undergraduate Research Advisees**

- **Past**

4. Mingjian Lu, *University of California, Berkeley* July 2016 - Feb. 2017
Topic: *Optimization of 1-D Transport Solvers in Python.*
3. Clay Shieh, *University of California, Berkeley* Jan. 2016 - May 2016
Topic: *Implementation of 1-D Transport Solvers in Python.*
2. Akash Pakanati, *RWTH Aachen University* June 2013 - Mar. 2014
Topic: *Simulation of Photon Path-length Distributions in Atmospheric Clouds.*
1. Nikhil Bandari, *RWTH Aachen University* May 2013 - July 2013
Topic: *Image Processing Techniques Applied to Reconstruction Algorithms for Neutron Imaging.*

TEACHING EXPERIENCE

- ★ **The Ohio State University, Columbus**

- **Faculty (Autumn 2017 - present)**

Notes on OSU's Student Evaluations

- *SSLE ratings (Autumn 2025 - present) reflect answers to the question*

“On a scale of 1-10, how effective are the teaching methods of this faculty member? The scale of 1-10 in the question above measures the effectiveness of the faculty member with 1 being not effective at all and 10 being extremely effective.”

- *SEI ratings (Spring 2018 - Spring 2025) reflect answers to the question*

“Overall, I would rate this instructor as” (5-point scale).

The College and University comparison groups are based on the size of the class. The Department group is not. Class size groups are 1-19, 20-60 and 61+.

- *Complete SSLE and SEI reports, with students' comments, are available on my website at*

www.richardvasques.com/pages/seis

– **Neutron Slowing Down and Thermalization** (Nuclr Eng 7865)

- SSLE Ratings

- Spring 2026, **4 students** (Current).

- SEI Ratings

- Spring 2024, **2 students**, 100% response ratio. Overall Rating: **5.00/5.00**.
Department · College · University averages: 4.36 · 4.50 · 4.54 / 5.00
- Spring 2022, **10 students**, 80% response ratio. Overall Rating: **5.00/5.00**.
Department · College · University averages: 4.23 · 4.54 · 4.59 / 5.00
- Spring 2020, **7 students**, 86% response ratio. Overall Rating: **5.00/5.00**.
Department · College · University averages: 4.25 · 4.52 · 4.59 / 5.00

– **Reactor Physics** (Nuclr Eng 5002; formerly Reactor Theory Nuclr Eng 6708)

- SSLE Ratings

- Autumn 2025, **13 students**, 69% response ratio. Overall Rating: **9.56/10.0**.

- SEI Ratings

- Autumn 2024, **20 students**, 65% response ratio. Overall Rating: **5.00/5.00**.
Department · College · University averages: 4.31 · 4.36 · 4.39 / 5.00
- Autumn 2023, **11 students**, 82% response ratio. Overall Rating: **4.89/5.00**.
Department · College · University averages: 4.17 · 4.53 · 4.55 / 5.00
- Autumn 2022, **5 students**, 100% response ratio. Overall Rating: **5.00/5.00**.
Department · College · University averages: 4.17 · 4.51 · 4.56 / 5.00
- Autumn 2021, **8 students** (as NE 6708), 88% response ratio. Overall Rating: **4.71/5.00**.
Department · College · University averages: 4.21 · 4.52 · 4.56 / 5.00
- Autumn 2020, **6 students** (as NE 6708), 100% response ratio. Overall Rating: **5.00/5.00**.
Department · College · University averages: 4.24 · 4.55 · 4.56 / 5.00

– **Introduction to Nuclear Science and Engineering** (Nuclr Eng 4505 / Mech Eng 4505)

- SEI Ratings

- Spring 2025, **100 students** 80% response ratio. Overall Rating: **4.89/5.00**.
Department · College · University averages: 4.28 · 4.21 · 4.32 / 5.00
- Autumn 2024, **89 students**, 80% response ratio. Overall Rating: **4.86/5.00**.
Department · College · University averages: 4.31 · 4.19 · 4.29 / 5.00
- Spring 2024, **102 students**, 74% response ratio. Overall Rating: **4.89/5.00**.
Department · College · University averages: 4.36 · 4.21 · 4.32 / 5.00
- Autumn 2023, **94 students**, 90% response ratio. Overall Rating: **4.78/5.00**.
Department · College · University averages: 4.17 · 4.20 · 4.28 / 5.00
- Spring 2023, **98 students**, 90% response ratio. Overall Rating: **4.88/5.00**.
Department · College · University averages: 4.25 · 4.21 · 4.30 / 5.00
- Autumn 2022, **81 students**, 91% response ratio. Overall Rating: **4.80/5.00**.
Department · College · University averages: 4.17 · 4.18 · 4.26 / 5.00
- Spring 2022, **59 students**, 93% response ratio. Overall Rating: **4.87/5.00**.
Department · College · University averages: 4.23 · 4.35 · 4.44 / 5.00
- Autumn 2021, **53 students**, 96% response ratio. Overall Rating: **4.84/5.00**.
Department · College · University averages: 4.21 · 4.33 · 4.40 / 5.00
- Spring 2021, **60 students**, 88% response ratio. Overall Rating: **4.83/5.00**.
Department · College · University averages: 4.29 · 4.32 · 4.41 / 5.00

- Autumn 2020, **42 students**, 90% response ratio. Overall Rating: **4.92/5.00**.
Department · College · University averages: 4.24 · 4.34 · 4.41 / 5.00
 - Autumn 2018, **51 students**, 75% response ratio. Overall Rating: **4.58/5.00**.
Department · College · University averages: 4.19 · 4.27 · 4.34 / 5.00
 - Spring 2018, **43 students**, 84% response ratio. Overall Rating: **4.8/5.0**.
Department · College · University averages: 4.2 · 4.4 · 4.2 / 5.0
- **Nuc. Sciences & Eng. at The Ohio State University** (Nuclr Eng 2500) - **Created course**
 - SEI Ratings
 - Autumn 2022, **13 students**, 85% response ratio. Overall Rating: **4.82/5.00**.
Department · College · University averages: 4.17 · 4.51 · 4.56 / 5.00
 - Autumn 2021, **10 students** (as NE 2194), 70% response ratio. Overall Rating: **4.86/5.00**.
Department · College · University averages: 4.21 · 4.52 · 4.56 / 5.00
 - Autumn 2020, **18 students** (as NE 2194), 56% response ratio. Overall Rating: **4.60/5.00**.
Department · College · University averages: 4.24 · 4.55 · 4.56 / 5.00
- **Nuclear Engineering Seminar** (Nuclr Eng 6881)
 - Sp 2023, Sp/Au 2022, Sp/Au 2021, Au 2020
- **Nuclear Engineering Research** (Nuclr Eng 8998/8999)
 - Sp 2025, Sp/Su/Au 2024, Sp/Su/Au 2023, Sp/Su/Au 2022, Sp/Su/Au 2021, Sp/Su/Au 2020, Sp/Au 2019, Sp/Au 2018
- **Individual Studies in Nuclear Engineering** (Nuclr Eng 6193)
 - Au 2023, Au 2022, Sp 2020, Sp 2019

★ **University of California, Berkeley**

- **Guest Lecturer (Fall 2015 - Spring 2017)**
 - Introduction to Numerical Simulations for Radiation Transport: 11 lectures
 - Numerical Simulations in Radiation Transport: 7 lectures
 - Nuclear Reactor Theory: 3 lectures
 - Introduction to Nuclear Engineering: 1 lecture

★ **RWTH Aachen University, Germany**

- **Instructor**
 - Advanced Topics in Transport Theory: Summer 2013
- **Recitation Leader**
 - Mathematics III (Partial Differential Equations): Winter 2012-2013
- **Organizer and Instructor**
 - MathCCES Teaching Workshop: April 2013

★ **Fundação Getulio Vargas, Brazil**

- **Professor**
 - Matematica I (Calculus I): 2011-1, 2011-2, 2012-1
 - Matematica II (Calculus II): 2011-2, 2012-1

★ **University of Michigan, Ann Arbor**

– **Graduate Student Instructor**

- Calculus II (Math 116): Fall 2007
- Calculus I (Math 115): Fall 2006
- Data Functions & Graphs (Math 105): Fall 2005, Fall 2008

★ **Invited Short Courses**

– **Institute of Mathematics and Statistics, Federal Univ. of Rio Grande do Sul, Brazil**

- Particle Transport in Stochastic Media (graduate-level short course, 30 hours): December 2013

PROFESSIONAL SERVICE

• **Committee work for Dissertation and Thesis Defenses, Candidacy Exams (50)**

- **Internal to OSU (33)**

- Tomás M. Paganin, **Ph.D. Dissertation Defense** in Nuclear Engineering (Chair) Apr. 03, 2025
- Sunday A. Agbo, **Ph.D. Dissertation Defense** in Nuclear Engineering (Chair) Oct. 14, 2024
- Gulcin S. Türkmen, **Ph.D. Dissertation Defense** in Nuclear Engineering Aug. 14, 2024
- Zachary T. Condon, **Ph.D. Dissertation Defense** in Nuclear Engineering (Chair) Jul. 08, 2024
- Firas Abdullatif, **Ph.D. Dissertation Defense** in Nuclear Engineering Apr. 10, 2024
- Wyatt R. Panaccione, **Ph.D. Candidacy Exam** in Nuclear Engineering Dec. 07, 2023
- Matthew G. Bisbee, **Ph.D. Dissertation Defense** in Nuclear Engineering Nov. 17, 2023
- Gulcin S. Türkmen, **Ph.D. Candidacy Exam** in Nuclear Engineering Sep. 15, 2023
- Ali Mansoor, **Ph.D. Dissertation Defense** in Nuclear Engineering Aug. 10, 2023
- Tomás M. Paganin, **Ph.D. Candidacy Exam** in Nuclear Engineering (Chair) Aug. 08, 2023
- Sunday A. Agbo, **Ph.D. Candidacy Exam** in Nuclear Engineering (Chair) Aug. 07, 2023
- Zachary T. Condon, **Ph.D. Candidacy Exam** in Nuclear Engineering (Chair) Jul. 28, 2023
- Matthew G. Bisbee, **Ph.D. Candidacy Exam** in Nuclear Engineering May 12, 2023
- Joshua Ferrigno, **Ph.D. Candidacy Exam** in Nuclear Engineering Apr. 17, 2023
- Mertcan Atikler, **Master's Thesis Defense** in Nuclear Engineering Apr. 10, 2023
- Firas Abdullatif, **Ph.D. Candidacy Exam** in Nuclear Engineering Dec. 14, 2022
- Zuolong Zhu, **Ph.D. Dissertation Defense** in Nuclear Engineering Sep. 30, 2022
- Ryan J. Chesser, **Ph.D. Candidacy Exam** in Nuclear Engineering Sep. 23, 2022
- Mohammed Alsowaigh, **Master's Thesis Defense** in Nuclear Engineering July 21, 2022
- Ibrahim Oksuz, **Ph.D. Dissertation Defense** in Nuclear Engineering July 15, 2022
- Ali Mansoor, **Ph.D. Candidacy Exam** in Nuclear Engineering Mar. 02, 2022
- Zuolong Zhu, **Ph.D. Candidacy Exam** in Nuclear Engineering Jan. 07, 2022
- John J. Kuczek, **Ph.D. Dissertation Defense** in Nuclear Engineering (Chair) Nov. 12, 2021
- Tseelmaa Byambaakhuu, **Ph.D. Dissertation Defense** in Nuclear Engineering Apr. 08, 2021
- Tseelmaa Byambaakhuu, **Ph.D. Candidacy Exam** in Nuclear Engineering Jan. 06, 2021
- John J. Kuczek, **Ph.D. Candidacy Exam** in Nuclear Engineering (Chair) Nov. 02, 2020
- Robert K. Palmer, **Ph.D. Dissertation Defense** in Nuclear Engineering (Chair) June 22, 2020
- Joshua Rocheleau, **Master's Thesis Defense** in Nuclear Engineering Apr. 06, 2020
- William C. Chuirazzi, **Ph.D. Dissertation Defense** in Nuclear Engineering Mar. 20, 2020
- Robert K. Palmer, **Ph.D. Candidacy Exam** in Nuclear Engineering (Chair) Dec. 03, 2019
- Ibrahim Oksuz, **Ph.D. Candidacy Exam** in Nuclear Engineering Dec. 20, 2018

- Andrew M. Zapp, **Master's Thesis Defense** in Nuclear Engineering Dec. 17, 2018
- Boyuan Li, **Ph.D. Candidacy Exam** in Nuclear Engineering Apr. 30, 2018

- External to OSU (17)

- Wahid Khattak, **Doctoral Candidacy Exam** in Applied Mathematics Dec. 15, 2025
Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil
- Alan S. da Silva, **Doctoral Dissertation Defense** in Comp. Modeling Oct. 31, 2025
Universidade do Estado do Rio de Janeiro, Rio de Janeiro, Brazil
- Renato A.S. Klein, **Master's Thesis Defense** in Applied Mathematics Jan. 22, 2025
Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil
- Gustavo A. Lorensi, **Doctoral Dissertation Defense** in Applied Mathematics May 14, 2024
Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil
- Jardel M. Dylewski, **Doctoral Dissertation Defense** in Applied Mathematics Mar. 31, 2023
Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil
- Lisa S. Enomoto, **Doctoral Candidacy Exam** in Computational Modeling Jan. 20, 2023
Universidade do Estado do Rio de Janeiro, Rio de Janeiro, Brazil
- Alan S. da Silva, **Doctoral Candidacy Exam** in Computational Modeling Jan. 19, 2023
Universidade do Estado do Rio de Janeiro, Rio de Janeiro, Brazil
- Gustavo A. Lorensi, **Doctoral Candidacy Exam** in Applied Mathematics Nov. 18, 2022
Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil
- César Bublitz, **Doctoral Dissertation Defense** in Applied Mathematics Jan. 28, 2022
Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil
- Daniel G. Benvenuto, **Master's Thesis Defense** in Mechanical Engineering Dec. 16, 2021
Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil
- Luana Lazzari, **Doctoral Dissertation Defense** in Applied Mathematics Dec. 15, 2021
Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil
- Jardel M. Dylewski, **Doctoral Candidacy Exam** in Applied Mathematics Nov. 03, 2021
Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil
- Lisa S. Enomoto, **Doctoral Qualifying Exam** in Computational Modeling Feb. 26, 2021
Universidade do Estado do Rio de Janeiro, Rio de Janeiro, Brazil
- Alan S. da Silva, **Doctoral Qualifying Exam** in Computational Modeling Feb. 26, 2021
Universidade do Estado do Rio de Janeiro, Rio de Janeiro, Brazil
- Luana Lazzari, **Doctoral Candidacy Exam** in Applied Mathematics Mar. 10, 2020
Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil
- César Bublitz, **Doctoral Candidacy Exam** in Applied Mathematics June 06, 2019
Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil
- Eduardo S. Schneider, **Ph.D. Dissertation Defense** in Mathematics Aug. 21, 2018
Bowling Green State University, Bowling Green, OH

• Conference Activities (Organizing, Technical and Scientific Advisory Committees, etc.)

- M&C 2021: International Conference on Mathematics and Computational Methods Applied to Nuclear Science and Engineering, Raleigh, NC, Online Meeting (Oct. 3-7, 2021)
 - Member, Technical Program Committee
 - Member, Student Awards Committee
 - Session Chair: Transport in Stochastic Media I
- 26th ICTT: International Conference on Transport Theory, Paris, France (Sep. 23-27, 2019)
 - Member, Scientific Advisory Committee
- M&C 2019: International Conference on Mathematics and Computational Methods Applied to Nuclear Science and Engineering, Portland, OR (Aug. 25-29, 2019)

- Member, Technical Program Committee
- Member, Organizing Committee: Student Arrangement Chair
- 25th ICTT: International Conference on Transport Theory, Monterey, CA (Oct. 16-20, 2017)
 - Member, Local Organizing Committee
 - Session Organizer and Chair: Transport Modeling in Film and Industry
- American Nuclear Society (ANS) Annual Meeting, New Orleans, LA (June 12-16, 2016)
 - Session Chair: Uncertainty Quantification and Sensitivity Analysis Methods

● **Editorial Activities**

- Associate Guest Editor: Journal of Computational and Theoretical Transport, Volume 47, Issues 1-6 (2018)
- Member, Editorial Board: Energy Research Journal (July 2014 - June 2016)

● **Refereeing Activities**

- Reviewer for the following Journals (listed in alphabetical order):

○ Annals of Nuclear Energy	○ Journal of Scientific Computing
○ Brazilian Journal of Radiation Sciences	○ Kinetic and Related Models
○ Energy Research Journal	○ Medical Physics
○ International Journal of Nuclear Energy Science and Technology	○ Nuclear Engineering and Design
○ Journal of Computational and Theoretical Transport	○ Nuclear Engineering and Technology
○ Journal of Computational Physics	○ Nuclear Science and Engineering
○ Journal of Quantitative Spectroscopy and Radiative Transfer	○ Progress in Nuclear Energy
- Reviewer for the following Technical Conferences:
 - International Nuclear Atlantic Conference (INAC) 2021
 - American Nuclear Society (ANS)
 - * ANS Mathematics & Computation Division (MCD)

· MCD Topical Meeting, 2021	· MCD Topical Meeting, 2017
· MCD Topical Meeting, 2019	· MCD Topical Meeting, 2015
 - * ANS Student Conference, 2016
 - International Conference on Transport Theory (ICTT)

* 26 th ICTT, 2019	* 25 th ICTT, 2017
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- Reviewer for the following Fellowships:

○ Pelotonia Graduate Fellowship	
* Autumn 2020	* Autumn 2019

● **Outreach Activities**

- Inaugural guest speaker at the “Faculty Speaker Night” hosted by the ANS Student Chapter at The Ohio State University, Columbus, OH (Feb. 01. 2024)
- Member, Organizing Committee: Nuclear Innovation Bootcamp - Tomorrow Today, UC Berkeley, CA (July 16-29, 2017)

- Member, Organizing Committee: Nuclear Innovation Bootcamp - Nuclear Upended, UC Berkeley, CA (Aug. 01-12, 2016)

- **Other Activities - Broad Academic Community**

- Online interview for Engineering Foundations class at Catholic Central High School, Springfield, OH (Apr. 02, 2022)
- Virtual “Alumni Chat” with Graduate Students of the Applied and Interdisciplinary Mathematics (AIM) Graduate Program at the University of Michigan, Ann Arbor (Feb. 19, 2021)

- **Courtesy Appointments**

- Adjunct Professor, Department of Mathematics & Statistics Aug. 2018 - Dec. 2024
Bowling Green State University, Bowling Green, OH

- **Professional Societies**

- Member, ANS - American Nuclear Society (2012 - present)
 - Mathematics & Computation Division
 - Division Treasurer (June 2022 - Nov. 2023)
 - Reactor Physics Division
 - Young Members Group
 - Faculty Advisor for OSU ANS Student Section (Aug. 2019 - Aug. 2023)
- Member, SIAM - Society for Industrial and Applied Mathematics (2012 - present)
 - SIAG on Computational Science and Engineering
- Council Member, Brazilian Alumni Association of Fulbright Fellows (2010 - 2012)

- **Internal Service for OSU - Departmental Committees and Program Management**

- MAE Graduate Studies Committee (member), Autumn 2025 - present
 - Previously: Autumn 2017 - Autumn 2022
 - Admissions Subcommittee (member), Autumn 2017 - Autumn 2022
 - Policy & Procedure Subcommittee (member), Autumn 2017 - Autumn 2022
 - Fellowship Subcommittee (member), Autumn 2017 - Autumn 2022
- Advisor: Nuclear Engineering Undergraduate Minor Program, Oct. 2021 - present
- Standing Faculty Search Committee (member), Autumn 2021 - present
- Nuclear Engineering Graduate Studies Committee (member), Autumn 2017 - present
- Nuclear Engineering Graduate Admissions Committee (member), Autumn 2017 - present
- Nuclear Engineering Graduate Recruiting Committee (member), Autumn 2017 - present
- Nuclear Engineering Undergraduate Major Program Development Committee (member), Autumn 2020 - present
- Member of the Qualifying Exam Committee in Mathematics for Mechanical and Aerospace Engineering Graduate Programs (Jan. 2023, Jan./Aug. 2022, Jan./Aug. 2021, Jan./Aug. 2020, Jan./Aug. 2019)
- Nuclear Engineering Graduate Program Course Reform Committee (member), Autumn 2019 - Autumn 2022
- MAE Department Chair Search Committee (member), Autumn 2021 - Spring 2022
- MAE Department Chair Search Committee (member), Autumn 2019
- Member of the Qualifying Exam Committee in Reactor Physics and Engineering (Aug. 2019, Aug. 2018)
- Member of the Qualifying Exam Committee in Statistics for Mechanical and Aerospace Engineering Graduate Programs (Aug. 2019)

- Served as GSC representative in the Dynamics and Kinematics Oral Qualifying Exam of Mr. Andrej Simeunovic (Feb. 22, 2019)
- Faculty Search Committee: Nuclear Thermal Hydraulics (member), Autumn 2017 - Spring 2018

• **Internal Service for OSU - Other Departmental Service**

- Organized and hosted Nuclear Engineering Minor Celebration event (Oct. 29, 2025)
- Organized and hosted Nuclear Engineering Minor Welcome Bash event (Aug. 25, 2022)
- Visited PHYSICS 2095 (Introductory Physics Seminar) class to give a presentation and discuss NE minor and graduate programs and research (Oct. 03, 2022; Sep. 27, 2021)
- Presented a Graduate Research Information Session organized by the MAE graduate academic advisors (Nov. 03, 2021)
- Organized OSU's Virtual Career Fair Booth at the ANS 2021 Student Conference (Apr. 2021)
- Organized and hosted recruiting event for the Nuclear Engineering Minor Program (Apr. 06, 2021)
- Created new NE course: "NE 2500 - Nuclear Engineering at The Ohio State University", offered for the first time in Autumn 2020 as NE 2194 (Spring 2020)
- Monte and Usha Ahuja Distinguished Lecture Series
 - Hosted Dr. Anil K. Prinja from the University of New Mexico, Albuquerque (Feb. 2020)
- Nuclear Engineering Seminar
 - Hosted Dr. Ricardo C. Barros, from State University of Rio de Janeiro, Brazil (Aug. 2023)
 - Co-chair (Aug. 2019 - May 2023)
 - Hosted Dr. Julio Cesar L. Fernandes, from Federal University of Rio Grande do Sul, Brazil (Oct. 2021)
 - Hosted Dr. Ricardo C. Barros, from State University of Rio de Janeiro, Brazil (Dec. 2019)
 - Hosted Dr. James Bevins from Air Force Institute of Technology (Dec. 2018)
 - Hosted Dr. Anthony Davis from NASA Jet Propulsion Laboratory (Nov. 2018)
- Drafted content for the Nuclear Program handout material (Nov. 2019)
- Organized and hosted Nuclear Program information session (Nov. 22, 2019)
- Member of the work group developing the Nuclear Engineering Program Strategic Plan (Jan. 2018 - Mar. 2019)
- Organized and hosted a Recruitment Event for the Nuclear Engineering Graduate Program (Oct. 30, 2018)
- Visited ENGR 1100 (Engineering Survey) class to give a presentation and discuss undergraduate research and connecting with faculty members (Oct. 08, 2018)
- Developed HTML Recruiting Email for the Nuclear Engineering Program (completed Feb. 05, 2018)
- Designed syllabus for new course: ME 8518 Advanced Mathematical Methods in ME, in preparation for new Math QE (Dec. 15, 2017)
- Wrote first draft of the Strategic Plan for the Nuclear Engineering Program (Nov. 2017)
- Organized and hosted recruiting event for the Nuclear Engineering graduate program at the University of Dayton (Nov. 29, 2017)
- Organized and hosted recruiting event for the Nuclear Engineering graduate program at Case Western Reserve University (Nov. 14, 2017)

• **Internal Service for OSU - College of Engineering**

- Represented the College in the Graduate School Fair at Ohio Northern University (Sep. 27, 2017)
- Represented the College in the Graduate School Fair during the "Big Ten+ Graduate School Exposition" at Purdue University (Sep. 25, 2017)

• **Internal Service for OSU - University Level**

- Faculty Advisor for OSU ANS Student Section (Aug. 2019 - Aug. 2023)
- Served as Graduate Faculty Representative for the Graduate School at Ms. Jacqueline Lima Coelho Sampaio dissertation defense in the Graduate Program in Spanish & Portuguese (Aug. 15, 2022)
- Served as Graduate Faculty Representative for the Graduate School at Mr. Raphael Palermo dos Santos dissertation defense in the Graduate Program in Portuguese (July 16, 2021)
- Member of OSU's review committee in the Internal Limited Competition for the NRC University Nuclear Leadership Program, Research and Development Grant, FY2021 (Apr. 2021)
- Pelotonia Fellowship Program Reviewer (Autumn 2020, Autumn 2019)
- Served as Graduate Faculty Representative for the Graduate School at Mr. Fernando Lima e Morato dissertation defense in the Graduate Program in Portuguese (May 29, 2019)
- Served as Graduate Faculty Representative for the Graduate School at Mr. Andrew Hart's dissertation defense in the Department of Physics (Jan. 26, 2018)