IDENTIFICATION

Anca Ruxandra Rădulescu, Associate Professor
Department of Mathematics, SUNY New Paltz
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EDUCATION

Degree	Date Received	Institution and Location	Major Field
Programming Degree	1994	Computer Science High School, Romania	Computer Science
B.S.	1998	University of Bucharest, Romania	Mathematics
Ph.D.	2005	Stony Brook University	Mathematics

EMPLOYMENT

Year	Rank	Institution and Location
2020-present	Associate Professor	Mathematics, SUNY New Paltz
2023 & 2024	Visiting Scholar	Mathematics, West University of Timişoara
2014-2020	Assistant Professor	Mathematics, SUNY New Paltz
2010-2014	Instructor	Mathematics, CU Boulder
2009-2010	Assistant Professor Adjunct	Psychology, CU Boulder
2009-2010	Postdoctoral fellow	Bioengineering, Stony Brook
2006-2009	Instructor	Applied Mathematics, CU Boulder
2005-2006	Visiting Assistant Professor	Mathematics, CUNY Brooklyn College
2005	Postdoctoral fellow	Bioengineering, Stony Brook
2004	Summer intern	Cold Spring Harbor Laboratory
1998-2005	Graduate student	Mathematics, SUNY Stony Brook

EXTERNAL GRANTS, AWARDS, AND HONORS

Collaborative Research: NSF-UEFISCDI: RUI: Effects of the interplay between connectivity architecture and distributed delays in brain network dynamics. Lead PI: Rădulescu (SUNY New Paltz); co-PIs Kaslik (West University of Timişoara), Covey (University at Buffalo). Funding source: National Science Foundation. Award period: 10/2024-09/2027. Amount: **$491,533**.

MSRI Summer Research Program for Women in Mathematics: "Understanding the effects of human behavior on epidemic dynamics." Participants: K. Larripa, A. Rădulescu, D. Schmidt. Funding source: Mathematical Sciences Research Institute. Award period: two-week MSRI summer visit (07/2024). Amount: **$4,250** travel and family support; **$1,600** for post visit travel.

AMS-Simons Research Enhancement Grants for Primarily Undergraduate Institution Faculty: Complex dynamics in networks, templates and mutated systems. PI: Rădulescu. Funding source: Simons Foundation; the AMS; and Eve, Kirsten, Lenore, and Ada of the Menger family. Award period: 07/2023-06/2026. Amount: **$9,000** for PI research support; **$1,800** for department and institutional facilities.

National Research Experience for Undergraduates Program (NREUP): The mathematics of incorporating human behaviour in epidemic modeling. PI: Rădulescu; co-I Cohen. Funding source: Mathematical Association of America. Award period: 06/2023-07/2023. Amount: **$41,262** for PI and student support (four undergraduate students recruited from underrepresented groups).

SUNY Chancellor's Award for Excellence in Scholarship and Creative Activities, 2022. System-wide award, recognizing consistently superior research achievements and pursuit of excellence.

MSRI Summer Research Program for Women in Mathematics: "Mathematical models of retina metabolism, implications for pathology and treatment." Participants: A. Aparicio, E. T. Camacho, A. Dobreva, K. Larippa, A. Rădulescu, D. Schmidt, I. Trejo. Funding source: Mathematical Sciences Research Institute. Award period: two-week MSRI summer visit, 07/2020 (postponed to remote collaboration in Fall 2021, due to COVID 19 closures). Amount: **$16,275** for collaborative activities; **$7,000** for post visit travel.

Workshop in Mathematics, Division of Analysis: "North Eastern Analysis Meeting, NEAM 2018." PIs: Rădulescu, Isralowitz, Mayeli. Funding source: National Science Foundation. Award Period: 10/01/2018-09/31/2019. Amount: **$24,000.**

Collaboration Grant for Mathematicians: "Dynamic neural networks and applications to modeling brain function." PI: Rădulescu. Funding source: Simons Foundation. Award period: 09/2017-08/2022. Amount: **$42,000.**

Best Paper Award (with mentee Simone Evans), North-Eastern Regional Conference on Complex Systems, 2019: *"Universality of the Configuration-Dynamics Relationship in Nonlinear Networks."* Amount: **$2,000** (fee waiver for invited submission to the journal *Complexity*).

Collaborative Research Travel Grant: "A dynamical system approach to brain profiling in schizophrenia, based on imaging data." PI: Rădulescu. Funding source: Burroughs Wellcome Fund. Award period: 06/01/2011 – 08/31/2012. Amount: **$9,403**.

Schizophrenia Research Society Travel Fellowship. Funding source: Schizophrenia Research Society. Award period: 2010. Amount: **$1,000**.

Association of Women in Mathematics Travel Award. Funding source: Association of Women in Mathematics. Award period: 2008. Amount: **$2,000**.

INTERNAL GRANTS, AWARDS, AND HONORS

Research and Creative Projects Award: "Using complex dynamics to compute the brain". Funding source: SUNY New Paltz, Office of the Provost. Award period: 05/2024–12/2024. Amount: **$4,000** for student support and travel.

Summer Undergraduate Research Experience: "A model of predation and survival in a system of three interacting species." Funding source: New Paltz RSCA. Award period: 06/2024-08/2024. Amount: **$3,700** stipend for the student (246 hours of work); **$1,500** stipend for the faculty mentor and research support.

Faculty Grand Marshal at the New Paltz Commencement Ceremony, Fall 2023.

Discretionary Salary Award/Increase. Funding source: SUNY. Award period: 2016-2024. Average amount: **$ 600** per year.

AC^2 Summer Research Program: "Are our brains fractals, and why should we care?" Funding source: AC^2. Award period: 05/2022-06/2022. Amount: **$1,750** for each of the three students (125 hours of work); **$3,000** for faculty mentor; **$400** for supplies.

Summer Undergraduate Research Experience: "Synchronization and clustering in realistic reticular thalamic nuclei architectures." Funding source: New Paltz RSCA. Award period: 06/2022-08/2022. Amount: **$3,400** stipend for the student (280 hours of work); **$1,200** stipend for the faculty mentor and research support.

AC^2 Summer Research Program: "Comparative evolution of COVID-19 effect in the US states." Funding source: AC^2. Award period: 05/2021-06/2021. Amount: **$1,785** for each of the three students (125 hours of work); **$2,150** for faculty mentor; **$400** for supplies.

AC^2 Summer Research Program: "Dynamic Trends in the COVID 19 Outbreak in New York Counties." Funding source: AC^2. Award period: 05/2020-06/2020. Amount: **$1,300** for each of the three students (100 hours of work); **$2,000** for faculty mentor; **$400** for supplies.

Summer Undergraduate Research Experience: "Using data-driven dynamic networks to model the course of the COVID 19 outbreak." Funding source: New Paltz RSCA. Award period: 06/2020-08/2020. Amount: **$3,304** stipend for the student (280 hours of work); **$1,200** stipend for the faculty mentor; up to **$1,000** in research support.

CPD scholarship award for participation in the SUNY RF program: "Grants and Proposals: If you write it, they will fund!" Funding Source: SUNY. Award period: 06/2020. Amount: **$225**.

Research and Creative Projects Award: "Using a network model of the striatum to understand hyperactivity patterns in obsessive compulsive disorder." Funding source: SUNY New Paltz, Office of the Provost. Award period: 05/2019–12/2019. Amount: **$1,350** for student support.

Annual Mentor Award 2017. Source: New Paltz RSCA. Amount: **$500** (travel support).

Research and Creative Projects Award: "Complex Dynamics Networks." Funding source: SUNY New Paltz, Office of the Provost. Award period: 09/2016–12/2017. Amount: **$2,000** for student support.

Summer Undergraduate Research Experience: "Fractal properties of hybrid Mandelbrot sets." Funding source: New Paltz RSCA. Award period: 06/2016-08/2016. Amount: **$3,400** stipend for the student (280 hours of work); **$1,200** stipend for the faculty mentor and research support.

Seed grant: "Student assistant support for mentored sustainability research." Funding source: SUNY New Paltz Sustainability Research Fund. Award period: 2017-2018. Amount: **$1,000** for student support.

Seed grant: "Sustainability course development." Funding source: SUNY New Paltz Sustainability Research Fund. Award period: 05/2017-08/2017. Amount: **$500**.

Provost Challenge grant: "Using nonlinear dynamics to model brain dysregulation in schizophrenia." Funding source: SUNY New Paltz, Office of the Provost. Award period: 09/2016–12/2017. Amount: **$5,996** (used for one course release and travel).

University of Colorado Arts and Sciences Fund for Excellence Award. Source of support: Office of the Dean, University of Colorado. Award period: 2013. Amount: **$500**.

"Woman Who Makes a Difference" Award. Source: University of Colorado Women Resource Center. Period: 2012.

PEER REVIEWED PUBLICATIONS

Links to the journal page and to the article pdf can be all found on my professional research page: `https://www2.newpaltz.edu/~radulesa/publications.html`.

1. K. Larripa, A. Rădulescu, 2025. *A mathematical model of microglia glucose metabolism and lactylation with positive feedback.* Journal of Theoretical Biology. 112049.

2. A. Rădulescu, A. Longbotham, A. Collier, 2025. *Effects of local mutations in quadratic iterations*. **Mentored research.** AIP Chaos. 35. *In press.*

3. M. Comerford, A. Rădulescu, K. Cavanagh, 2024. *Mandelbrot sets for fixed template iterations.* **Mentored research.** Proceedings of the AMS: Contemporary Mathematics on Geometry and Dynamical Systems. 797; 1-14.

4. E. Kaslik, E.-A. Kokovics, A. Rădulescu, 2024. *Stability of coupled Wilson-Cowan systems with distributed delays*. **Graduate mentored research.** Chaos, Solitons and Fractals. 179; 114420.

5. A. Rădulescu, D. Evans, A-D. Augustin, A. Cooper, J. Nakuci, S. Muldoon, 2023. *Synchronization and clustering in complex quadratic networks.* **Mentored research.** Neural Computation. 36(1); 75-106.

6. A. Rădulescu, J. Nakuci, S. Evans, S. Muldoon, 2023. *Computing brain networks with complex dynamics.* **Mentored research.** Neural Computing and Applications. 35; 21115-21127.

7. A. Rădulescu, C. Williams, G. Todd, A. Lemus, H. Chesbro, A. Scimemi, 2022. *Estimating the glutamate transporter surface density in mouse hippocampal astrocytes.* **Mentored research.** PloS Computational Biology. 18(2); e1009845.

8. E. Camacho, A. Dobreva, K. Larripa, A. Rădulescu, D. Schmidt, I. Trejo, 2022. *Analyzing a mathematical model for metabolic pathways in a single cone to gain insight into pathological mechanisms.* Bioscience Reports. 42. (Collaborative work supported by the MSRI Summer Research Program.)

9. E. Kaslik, E. Kökövics, A. Rădulescu, 2022. *Stability and bifurcations in Wilson-Cowan systems with distributed delays, and an application to basal ganglia interactions.* Comm in Nonlinear Science and Numerical Simulations. 104; 105984.

10. A. Rădulescu, S. Ballard, K. Gonzalez, J. Linton, 2021. *Dynamic coupling between the COVID epidemic timeline and the behavioral response to PAUSE in New York State counties.* **Mentored research.** Plos One. 16(8): e0255236.

11. A. Rădulescu, K. Butera, B. Williams, 2021. *Template iterations of quadratic maps and hybrid Mandelbrot sets.* **Mentored research.** Journal of Nonlinear Science. 31(22).

12. E. T. Camacho, A. Dobreva, K. Larripa, A. Radulescu, D. Schmidt, I. Trejo, 2021. *Mathematical Modeling of Retinal Degeneration: Aerobic Glycolysis in a Single Cone.* In: Using Mathematics to Understand Biological Complexity. Springer, Cham. 135-178. (Collaborative and mentoring work supported by the Association for Women in Mathematics.)

13. A. Rădulescu, 2020. *Course of the first month of the COVID 19 outbreak in the New York State counties.* Plos One. 15(9); e0238560.

14. A. Rădulescu, C. Williams, K. Cavanagh, 2020. *Management strategies in a SEIR-type model of COVID 19 community spread.* **Mentored research.** Nature: Scientific Reports. 10(1); 1-16.

15. E. Kaslik, E. Kökövics, A. Rădulescu, 2020. *Wilson–Cowan neuronal interaction models with distributed delays.* In: Lacarbonara W., Balachandran B., Ma J., Tenreiro Machado J., Stepan G. (eds) New Trends in Nonlinear Dynamics. Springer, Cham. 203-211.

16. E. Kaslik, M. Neamţu, A. Rădulescu, 2020. *A time-delay nonlinear model of dopamine-modulated prefrontal-limbic interactions in schizophrenia.* In: Lacarbonara W., Balachandran B., Ma J., Tenreiro Machado J., Stepan G. (eds) New Trends in Nonlinear Dynamics. Springer, Cham. 93-201.

17. A. Rădulescu, T. Lundgren, 2019. *A pharmacokinetic model of lead absorption and calcium competitive dynamics.* **Mentored research.** Nature Scientific Reports. 9(1); 1-27.

18. E. Camacho, A. Rădulescu, P. Marshall, S. Wirkus, 2018. *A qualitative analysis of ubiquitous regulatory motifs in Saccharomyces Cerevisiae genetic networks.* Comm in Nonlinear Science and Numerical Simulations. 69; 148-167.

19. A. Rădulescu, S. Evans, 2018. *Asymptotic sets in networks of coupled quadratic nodes.* **Mentored research.** Journal of Complex Networks. doi: 10.1093.

20. C. Anghel, K. Archer, J-M. Chang, A. Cochran, A. Rădulescu, C. Salafia, R. Turner, K. Djima, L. Zhong, 2018. *Simulations of the vascular network growth process for studying placenta structure and function associated with autism.* Book chapter in: *Understanding Complex Biological Systems with Mathematics,* Springer. Pages 145-169. (Collaborative work supported by the Math Biosciences Institute and the Association for Women in Mathematics.)

21. C. Anghel, K. Archer, J-M. Chang, A. Cochran, A. Rădulescu, C. Salafia, R. Turner, K. Djima, L. Zhong, 2018. *Placental vessel extraction with shearlets, Laplacian eigenmaps, and a conditional generative adversarial network.* Book chapter in: *Understanding Complex Biological Systems with Mathematics,* Springer. Pages 171-196. (Collaborative work supported by the Math Biosciences Institute and the Association for Women in Mathematics.)

22. A. Rădulescu, J. Herron, C. Kennedy, A. Scimemi, 2017. *Global and local excitation and inhibition shape the dynamics of the cortico-striatal-thalamo-cortical pathway.* **Mentored research.** Nature Scientific Reports. 7 (1); 7608.

23. A. Rădulescu, E. Hannon, 2017. Applying fMRI complexity analyses to the single subject: a case study for proposed neurodiagnostics. **Mentored research.** Neurocase. 23(2); 120-137.

24. A. Rădulescu, R Marra, 2016. *A mathematical model of reward and executive circuitry in obsessive compulsive disorder.* **Mentored research.** Journal of Theoretical Biology. 414; 165-175.

25. A. Rădulescu, J Herron, 2016. *Ebola impact and quarantine in a network model.* **Mentored research.** American Journal of Undergraduate Research. 13(4).

26. A. Rădulescu, A. Pignatelli, 2016. *Real and complex behavior for networks of coupled logistic maps.* **Mentored research.** Nonlinear Dynamics. 87(2); 1295-1313.

27. E. Camacho, A. Rădulescu, S. Wirkus, 2016. *Bifurcation analysis of a photoreceptor interaction model for Retinitis Pigmentosa.* Comm in Nonlinear Science and Numerical Simulations. 38; 267-276.

28. L. Benney, A. Rădulescu, 2016. *An energy balance model of carbon's effect on climate change.* **Mentored research.** Ball State Undergraduate Mathematics Exchange. 10(1); 1-15.

29. A. Rădulescu, A. Pignatelli, 2016. *Symbolic template iterations of complex quadratic maps.* **Mentored research.** Nonlinear Dynamics. 84(4); 2025-2042.

30. A. Rădulescu, 2016. *Neural network spectral robustness under perturbations of the underlying graph.* Neural computation. 28 (1).

31. A. Rădulescu, Sergio Verduzco-Flores, 2015. *Nonlinear network dynamics under perturbations of the underlying graph.* Chaos. 25(1).

32. A. Rădulescu, Lilianne Mujica-Parodi, 2014. *Network connectivity modulates power spectrum scale invariance.* NeuroImage. 90; 436-448.

33. A. Rădulescu, 2013. *Input statistics and Hebbian cross-talk effects.* Neural Computation. 26 (4).

34. A. Rădulescu, L.R. Mujica-Parodi, 2013. *Human gender differences in the perception of conspecific alarm chemosensory cues*. PLoS ONE. 8(7): e68485.

35. A. Rădulescu, P. Adams, 2013. *Hebbian crosstalk and input segregation*. J Theor Biol. 337; 133-149.

36. A. Rădulescu, D. Rubin, H. Strey, L.R. Mujica-Parodi, 2011. *Power spectrum scale invariance identifies prefrontal dysregulation in paranoid schizophrenia*. Human Brain Mapping. 33 (7); 1582-1593.

37. A. Rădulescu, 2011. *Quantifying the dynamics of central systemic degeneration in schizophrenia*. Book chapter in: Handbook of Schizophrenia Spectrum Disorders. 1st Edition. Volume I: Conceptual Issues and Neurobiological Advances. Springer [Ed. Ritsner, Michael].

38. A. Rădulescu, 2011. *Intuitive coding – vision and delusion*. Philosophical Psychology. 24 (2); 145-157.

39. A. Rădulescu, 2010. *Mechanisms explaining transitions between tonic and phasic firing in neuronal populations as predicted by a low dimensional firing rate model*. PLoS ONE 5 (9); e12695.

40. A. Rădulescu, L.R. Mujica-Parodi, 2009. *A principal component network analysis of prefrontal-limbic fMRI time series in healthy controls and schizophrenia patients*. Psychiatry Research: Neuroimaging. 174(3); 184-194.

41. A Rădulescu, 2009. *A multi-etiology model of dysregulation in schizophrenia*. Journal of Theoretical Biology. 259 (2); 269-279.

42. A. Rădulescu, P. Adams, K. Cox, 2009. *Hebbian errors in learning: an analysis using the Oja model*. Journal of Theoretical Biology. 258 (4); 489-501.

43. A. Rădulescu, Lilianne Mujica-Parodi, 2008. *A systems approach to prefrontal-limbic dysregulation in schizophrenia*. Neuropsychobiology. 57 (4); 206-216.

44. A. Rădulescu, 2008. *Schizophrenia - a parameters' game?* Journal of Theoretical Biology. 254 (1); 89-98.

45. A. Rădulescu, 2008. *Computing topological entropy in a space of quartic polynomials*. Journal of Statistical Physics. 130 (2); 373-385.

46. A. Rădulescu, 2007. *On complexity of quartic polynomials and the Connected Isentropes Conjecture*. Discrete and Continuous Dynamical Systems, Series B. 19 (1); 139-175.

INVITED TALKS (SINCE 2020)

Mapping neural networks using complex dynamics. The Institute for Advanced Environmental Research, West University of Timisoara, May 2024.

Complex dynamics in networks, templates and mutated systems, Applied Mathematics Colloquium, University of Arizona, October 2023.

Gap junctions and synchronization clusters in the Thalamic Reticular Nucleus, Topics in Mathematical Biology Symposium, SIAM Dynamical Systems, Portland, May 2023.

Stability and bifurcations in Wilson-Cowan systems with distributed delays, Smart Diaspora 2023, Timişoara, April 2023.

Using complex dynamics to understand the brain, Mathematics Seminar, Bard College, February 2023.

Mathematical Modeling of Retinal Degeneration: Aerobic Glycolysis in a Single Cone, Joint Mathematics Meetings, Boston, January 2023.

Complex dynamics in networks, templates and mutated systems, Complex Dynamics Seminar, CUNY Graduate Center, October 2022.

Architecture-dependent bifurcations and clustering in brain networks, Mathematics Colloquium, Ithaca College, May 2021.

Using mathematical modeling to understand the COVID 19 epidemic dynamics, keynote at the Symposium for Undergraduate Mathematics Research, New Paltz, September 2022.

Synchronization and clustering in complex quadratic networks, AWM Symposium, June 2022.

Architecture-dependent bifurcations and clustering in brain networks. National Institute of Standards and Technology, Applied and Computational Mathematics Division Seminar Series, April 2021.

Management strategies in a SEIR-type model of COVID-19 community spread, Joint Mathematics Meetings, Virtual Meeting, January 2021. Presentation delivered by mentee Reed Williams.

Graph theory, dynamics, and how to classify brains. Mathematics Department, New Mexico Tech. January 2020.

Graph theory, dynamics, and how to classify brains. Theoretical Biology Seminar. Penn State University. February 2020.

Dynamic networks, theory and applications. Mathematics Department. Fairfield University, February 2020.

Graphs, fractals and how to classify brains. Mathematics Department. Fairfield University, February 2020.

CONFERENCE PRESENTATIONS (SINCE 2020)

Using complex dynamics to compute brain network, Dynamics Days. Denver, January 2025.

Mapping neural networks using complex dynamics, International Conference on Mathematical Neuroscience. Dublin, June 2024.

Dynamics of Wilson-Cowan systems with distributed delays, International Conference on Mathematical Neuroscience. Dublin, June 2024.

The Mandelbrot set for networks, templates and mutated systems , Biology and Medicine through Mathematics, Richmond, May 2023.

Computing brain networks with complex dynamics , Biology and Medicine through Mathematics, Richmond, May 2023.

Gap junctions and synchronization clusters in the Thalamic Reticular Nuclei , Biology and Medicine through Mathematics, Richmond, May 2023.

The Mandelbrot set for networks, templates and mutated systems, Joint Mathematics Meetings, Boston, January 2023.

Effects of local mutations in quadratic iterations, Biology and Medicine through Mathematics, May 2022.

Estimating glutamate transporter surface density in mouse hippocampal astrocytes, Biology and Medicine through Mathematics, Richmond, May 2022.

Estimating glutamate transporter surface density in mouse hippocampal astrocytes, Joint Mathematics Meetings, Virtual, April 2022.

Template iterations and hybrid Mandelbrot sets, Joint Mathematics Meetings, Virtual, April 2022.

Complex dynamics in templates and mutated systems, Joint Mathematics Meetings, Virtual, April 2022.

Estimating glutamate transporter surface density in mouse hippocampal astrocytes, Society for Mathematics Biology Annual Meeting, Virtual, June 2021.

Complex dynamics in networks, templates and mutated systems, Fourth Northeast Regional Conference on Complex Systems, Virtual, April 2021.

Effects of local mutations in quadratic iterations. Virtual poster presentation. Society for Mathematical Biology Annual Meeting. Virtual Edition. August 2020.

Predicting dynamics from connectivity patterns in networks of canonical neural oscillators. Virtual poster presentation. International Conference on Mathematical Neuroscience. Digital Edition. July 2020.

A pharmacokinetic model of lead-calcium interactions. Biology and Medicine through Mathematics. (Accepted oral presentation; event canceled due to COVID 19 restrictions.) Virginia Commonwealth University. May 2020.

Effects of local mutations in quadratic iterations. Biology and Medicine through Mathematics. (Accepted poster presentation; event canceled due to COVID 19 restrictions.) Virginia Commonwealth University. May 2020.

Geometry-based estimates of glutamate transporter density in astrocytes. Biology and Medicine through Mathematics. (Accepted poster presentation; event canceled due to COVID 19 restrictions.) Virginia Commonwealth University. May 2020.

Predicting dynamics from connectivity patterns in networks of canonical neural oscillators, Dynamics Days 2020. Trinity College, Hartford. January 2020.

Effects of local mutations in quadratic iterations (delivered by mentee Abe Longbotham), Dynamics Days 2020. Trinity College, Hartford. January 2020.

SERVICE ACTIVITIES (SABBATICAL LEAVE 2022/2023)

Service to the Mathematics Department

Chair of Department Reappointment, Promotion Tenure Subcommittee, 2024-2025.

Department Search Committee member. General search, one tenure line, 2021-2022.

Department Reappointment, Promotion Tenure Subcommittee member, 2021-2022.

Chair of Department Reappointment, Promotion Tenure Subcommittee, five dossiers, 2020-2021.

Department Search Committee member. General search, two tenure lines, 2019-2020.

Department Reappointment, Promotion Tenure Subcommittee member, 2019-2020.

Department Discretionary Salary Awards Subcommittee member, 2019.

Department Search Committee member. Algebra and Geometry search, two tenure lines, 2018.

Department Reappointment, Promotion Tenure Subcommittee member, 2018.

Department Discretionary Salary Awards Subcommittee member, 2015.

Open House Department representative, Spring sessions, 2017-2019.

Department meeting recording secretary, Fall 2018, Fall 2021.

Service to the College

Deputy Chair of Discretionary Salary Increase Central Committee, Spring 2024.

Transition Ambassador Committee member for the New Paltz campus President, 2022-2023.

Presidential Search Committee member, September 2021-March 2022.

Discretionary Salary Increase Central Committee member, September 2021-May 2022.

Grant preparation group member for NSF S-STEM, December 2020-2022.

Calc I prep instructor for the AC^2 Diversity Program (2021).

Diversity panel member for AC^2 students: Getting Excellent Letters of Recommendation (2021).

PI for NSF proposal and primary organizer of the North Eastern Analysis Meeting, New Paltz, November 2018 (with co-PIs Izralowitz and Mayeli).

Sustainability Committee fellow 2016-present. Awarded seed grant for course development in mathematical modeling of sustainability. Awarded seed grant for mentored project on modeling developmental effects of lead from contaminated water in children.

Core leadership team member on New Paltz application for the Howard Hughes Medical Institute Award in support of Inclusive Excellence across STEM disciplines (2015-2016 and 2019-present).

Co-organizer of the Spuyten Duyvil Undergraduate Mathematics Conference (primary organizer: Francis Valiquette), SUNY New Paltz, April 2016.

Faculty co-advisor for Women in Science and Engineering New Paltz Chapter, 2014-2015, and 2021-ongoing.

Faculty mentor for undergraduate research, 2014-present (received Research, Scholarship and Creative Activities 2017 Mentor Award). The resulting publications with students are shown as " mentored research" in the publication list. Mentored students include:

- Students mentored under NSF-UEFISCDI support: Gabriel Rosales (2024).
- Students mentored through National Research Experience for Undergraduates Program (MAA funded seven week summer program): Amira Gbagba, Sofia Iturbides, Jasmin Nunuvero, Angie Santiago (2023).
- Students mentored through RSCA: Ariel Pignatelli (2014-2016), Rachel Marra, Brandee Williams (2016); Simone Evans (2018-2019); Tucker Lundgren (2018-2019); Reed Williams (2018-2020); Abraham Longbotham (2019); Kieran Cavanagh, Yan Lok Ko, Danae Evans (2021); Michael Anderson (2022-2023); Drew Kozlowski (2024).
- Students mentored through Provost Challenge Grant, and through Research and Creative Projects Awards: Caitlin Kennedy, Joanna Herron, Samantha Wyler, Ariel Pignatelli (2015-2016); Kelsey Butera, Simone Evans (2017); Kieran Cavanagh, Hayley Collucio (2019); Yan Lok Ko (2020); Jasmin Nunuvero, Angie Santiago (2024).
- Students mentored through AC^2 summer program: Samir Bah, Warren Wilson (2017); Kaitlyn Gonzalez, Johnathan Linton, Shelah Ballard (2020); Tatiana Alonso, Johanna Sanchez, Norman Read (2021); Amani-Dasia Augustin, Anthony Cooper (2022).
- Students mentored through Sustainability Committee seed grant: Matt Chason (2017); Tucker Lundgren (2018).
- Students mentored through New Paltz Foundation summer scholarship: Simone Evans (2017); Danae Evans (2021); Jasmin Nunuvero (2023).
- Students mentored through the Honors Program: Simone Evans (2018); Monika Morasse (2021).

M.S. thesis advisor: Reed Williams, Computer Science, SUNY New Paltz (2022): *Mapping gender to a spectrum through biological and societal lenses*.

Honors thesis major advisor and committee member: Monika Morasse, Mathematics, SUNY New Paltz (2021): *Water contamination in an energy balance model of climate with coupled iceline*.

Honors thesis major advisor and committee member: Simone Evans, Mathematics, SUNY New Paltz (2019): *Asymptotic sets in networks of coupled quadratic nodes*.

Senior project advisor and dissertation committee member: Lucas Benney, Physics, SUNY New Paltz (2015): *Carbon footprint triggered bifurcations in an energy balance model of climate*.

Honors thesis external committee member: Emily Hannon, Ecology and Evolutionary Biology, CU Boulder (2015): *Endohelminths from avian hosts in the San Francisco Bay Area of California*.

Mentor for student teams participating in the COMAP Interdisciplinary Contest in Modeling (2015-2018).

Faculty member of the CU Mathematics Department Diversity Committee, awarded the University of Colorado Diversity and Excellence Grant, 2013-2014.

Undergraduate Research Opportunity mentor and graduate research advisor at CU Boulder on dynamical systems and mathematical neuroscience, 2006-2014.

Freshman Calculus Course and Oral Assessments Coordinator, 2006-2009.

Letter provider for over a hundred peers and students, supporting academic and professional advancement.

Service to the profession

Guest editor for three special issues on *Advances in Differential Dynamical Systems with Applications to Economics and Biology*, for the MDPI journal *Mathematics*, 2022-2024.

External committee member for the Ph.D. thesis defense of Emanuel Kokovics, Mathematics Department, West University of Timisoara (defended 07/2024). Primary advisor: Dr. Eva Kaslik.

External co-advisor for the Ph.D. thesis of Roxana Matei, Computer Science, West University of Timisoara (defence expected 2025). Primary advisor: Dr. Eva Kaslik.

External co-advisor for the Ph.D. thesis of Dana Jianu, Computer Science, West University of Timisoara. Primary advisor: Dr. Eva Kaslik.

External Ph.D. defense committee member for Danielle Brager, Mathematics Department, Arizona State University: *Modeling and Analyzing the Progression of Retinitis Pigmentosa*, June 2020.

External Ph.D. defense committee member for Bryan Goldberg, Mathematics Department, University at Albany: *Geometric and dynamical properties of the infinite dihedral group*, May 2019.

Panel reviewer for the National Science Foundation, March 2018, 2022 and 2023.

Proposal reviewer for the Simons Foundation, Collaborative Awards for Mathematicians, 2019.

Reviewer for scientific proposals for Oak Ridge Associated Universities, 2015-2022.

Society for Mathematical Biology mentor (for students Arpit Swain and Ordono Vil), July 2020.

Project co-leader for a team of six investigators, via the Women Advancing Mathematical Biology program on "Approaches to Complex and Heterogeneous Systems," June 2019. This five day workshop, organized by the AWM at the Institute for Pure and Applied Mathematics at UCLA, was aimed at enhancing collaborations and mentoring between women in applied mathematics (joint work to be submitted for publication in October 2019). Previous participant as a team member in a prior edition of the workshop on "Understanding Complex Biological Systems with Mathematics," Mathematics Biosciences Institute, May 2017.

Faculty mentor for the Association for Women in Mathematics (research activities organizing, collaborative and mentoring network building between women in pure and applied mathematics). Mentor and student poster judge at the Joint Mathematics Meetings AWM and MAA sessions.

Active member of an NSF-funded work-group for course and program development in neuroscience and math biology. Participated in the startup summer workshop at University of Missouri, May 2016, and in follow-up teleconferences thereafter.

Co-organizer and Chair of the dynamical systems session at the North-Eastern Analysis Meeting, October 2016. Chair of the dynamical systems session at the WIMIN meeting, Center for Women in Mathematics, Smith College, September 2016. Session chair at the International Conference on Mathematical Neuroscience, Boulder, May 2017. Session chair at the Second Malta Conference in Graph Theory and Combinatorics, Qawra, June 2017.

Editorial Board member for Nature Scientific Reports (2017-present).

Journal reviewer for PloS One, Nature Scientific Reports, Physica A and D, Entropy, Journal of Theoretical Biology, Nonlinear Dynamics, Mathematics and Computers in Simulation, Journal of Physics Communications, Schizophrenia Research, Schizophrenia Bulletin. Cenference reviewer for the Northeast Regional Conference on Complex Dynamics (2018-2021), for the National Conference on Undergraduate Research Proceedings (2016) and for the International Multi-Conference on Complexity, Informatics and Cybernetics (2010-2015). Book reviewer for Mathematics Review (2019) and for Elsevier (2008-present).

Service to the community / outreach

Published three papers on mathematical modeling and data analysis of the COVID 19 outbreak (2020-2022), with continuing work on three other projects on epidemic modeling.

Published one paper on environmental and health impacts of lead contamination, 2019.

Co-organizer of the Ultimate Math Monsters, a community mathematics program for elementary school kids (2020).

Consultant for the New Paltz Drama Department in the production of *Mad Forest*, Fall 2016.

Faculty advisor for the UNICEF at CU Campus Initiative, 2011-2014.

Performed the mathematical analysis and participated in the filming of an episode of the Discovery Channel TV show "Curiosity," 2009.

Volunteer mathematics tutor for *Attention Homes* teen shelter, 2008.

WORKS IN PROGRESS

1. A. Rădulescu, K. Larripa, 2024. *A mathematical model of microglia Glucose metabolism and lactylation with positive feedback.* Under review. Manuscript available upon request.

2. A. Rădulescu, J. Nunuvero, A. Santiago, M. Cohen, 2024. *Modeling the effects of adherence to vaccination and health protocols in epidemic dynamics by means of an SIR model.* **Mentored research (NREUP).** Under review. Preprint: arXiv:2308.01038.

3. E. Kaslik, R. Matei, M. Neamţu, A. Rădulescu, 2024. *Hopf bifurcation analysis in a model of system degeneration in schizophrenia.* Under review. Manuscript available upon request.

4. A. Radulescu, E. Kaslik, A. Fikl. *Complex dynamics in two-dimensional coupling of quadratic maps.* In progress. Preprint: arXiv:2303.09329.

5. A. Rădulescu, M. Anderson, G. Rosales. *Gap junctions and synchronization clusters in Thalamic Reticular Nuclei.* **Mentored research.** In progress. Preprint: arXiv:2209.00384.

6. A. Rădulescu, T. Alonso, N. Reid, J. Sanchez, 2021. *State-dependent patterns and coupling between the vaccination schedule, population mobility and the COVID epidemic outline, in the US states*. **Mentored research.** Preprint: MedRx doi.org/10.1101/2021.07.18.21260708.

7. A. Rădulescu, M. Morasse, 2021. *Water contamination in an energy balance model of climate with coupled iceline*. **Mentored research.** Preprint: Research Square: doi 10.21203/rs.3.rs-636167/v1.

8. A. Rădulescu, D. Kozlowski, R. Halpern, C. O'Riordan. *A model of predation and survival in a system of three interacting species.* **Mentored research.** In progress. Preprint: arXiv:2501.06508.

9. A. Radulescu, E. Kaslik, A. Fikl, J. Nakuci, S. Muldoon, M. Anderson. *Fractal geometry predicts dynamic differences in structural and functional connectomes.* In progress.

10. E. Kaslik, A. Radulescu. *Networks of Wilson-Cowan systems with distributed delays.* In progress.

11. K. Larripa, A. Radulescu, D. Schmidt, 2024. Understanding the effects of human behavior on epidemic dynamics. **Collaboration supported by SLMath.** In progress.

12. K. Larripa, A. Radulescu, D. Schmidt. Interplay between metabolism and immunity in tumoral microenvironment. **Collaboration supported by SLMath.** In progress.

13. A. Rădulescu, R. Jacobowitz, A. Noel. *Are socio-economic factors relevant to lead contamination of drinking water in Hudson Valley school districts?* Manuscript available upon request.

14. A. Rădulescu, T. Lundgren, J. Chipkin. *Modeling the interaction of poverty and crime in urban environments.* **Mentored research.** In progress.

Signature

12/31/2024

Date