

**DANG H. NGUYEN**  
Curriculum Vitae

Department of Mathematics  
University of Alabama  
148 Gordon Palmer Hall  
Tuscaloosa, AL 35487, USA

hnguyen4@ua.edu  
dangnh.maths@gmail.com

## Education

---

- Ph.D. in Applied Mathematics, Department of Mathematics, Wayne State University, MI, USA, May 2018. **Advisor:** Prof. George Yin
- M.A. in Mathematical Statistics, Department of Mathematics, Wayne State University, MI, USA, December 2017.
- M.S. in Probability and Statistics, VNU- Hanoi University of Science, Vietnam, 2011.
- B.S. in Mathematics, VNU- Hanoi University of Science, Vietnam, 2008.

## Employment

---

- Assistant Professor, Department of Mathematics, University of Alabama, Tuscaloosa, AL, August, 2018-present.
- Graduate Assistant, Department of Mathematics, Wayne State University, USA, 2014-2018.
- Lecturer, Vietnam National University- Hanoi University of Science, Vietnam, 2008-2013.

## Short-term Visits

---

- Institute for Mathematics and its Applications, University of Minnesota, USA, May-June 2018.
- Vietnam Institute for Advanced Study in Mathematics, Hanoi, Vietnam, May-August 2015.
- Department of Applied Mathematics, University of Washington, USA, March-May 2013.

## Awards and Honors

---

- AMS-Simons Travel Grant, 2018.
- SIAM Travel Award, 2017.
- The Karl W. & Helen L. Folley Endowed Scholarship, Wayne State University, 2017, 2018.
- Thomas C. Rumble University Graduate Fellowship, Wayne State University, 2016-2017.
- The Maurice J. Zelonka Endowed Scholarship, Wayne State University, 2015.
- 2nd Prize in Student Research Award, VNU, Hanoi University of Science, 2008.
- Odon Vallet Scholarship, Vietnam, 2007.
- 2nd Prize for Analysis at the National Mathematical Students Olympiad, Vietnam, 2005.

## Research Interests

---

Applied Probability, Stochastic Processes, Stochastic Differential Equations, Optimal Control, Dynamical Systems, Mathematical Biology.

## Publications

---

### Published/Accepted

1. D. H. Nguyen and G. Yin, Stability of Regime-Switching Diffusion Systems with Discrete States Belonging to a Countable Set, *SIAM J. Control Optim.*- to appear
2. D. H. Nguyen and G. Yin, Recurrence for linearizable switching diffusion with past dependent switching and countable state space, *Math. Control Relat. Fields.* 8 (2018) no.(3&4): 879-897.
3. A. Hening, D. H. Nguyen, S. C. Ungureanu and T. K. Wong, Asymptotic harvesting of populations in fluctuating environments *J. Math. Biol.* - to appear
4. D. H. Nguyen and G. Yin, Sustainable Harvesting Policies Under Long-Run Average Criteria: Near Optimality *Appl. Math. Optim.* (2018)  
DOI 10.1007/s00245-018-9504-y; 36 pages
5. A. Hening and D. H. Nguyen, Persistence in stochastic Lotka-Volterra food chains with intraspecific competition, *Bull. Math. Biol.* - to appear (2018),<https://arxiv.org/abs/1704.07501>.
6. A. Hening and D. H. Nguyen, Coexistence and extinction for stochastic Kolmogorov systems, *Ann. Appl. Prob.* 28 (2018) , No. 3, 1893-1942.
7. D. H. Nguyen, G. Yin, Recurrence and Ergodicity of Switching Diffusions with Past-Dependent Switching Having A Countable State Space, *Potential Anal.* 48 (2018), No. 4, 405-435.
8. A. Hening and D. H. Nguyen, Stochastic Lotka-Volterra food chains, *J. Math Bio.* 77 (2018), no. 1, 135-163.
9. A. Hening, D. H. Nguyen, and G. Yin, Stochastic population growth in spatially heterogeneous environments: The density-dependent case, *J. Math. Biol* 76 (2018), No 3, 697-754.
10. D. H. Nguyen, G. Yin, C. Zhu, Certain properties related to well-posedness of switching diffusions, *Stochastic Process. Appl.* 127 (2017), 3135-3158.
11. D. H. Nguyen, and G. Yin, Switching diffusion with past dependent switching and countable switching space: Existence and uniqueness of solutions, recurrence, and weak stabilization, *Decision and Control (CDC), 2017 IEEE 56th Annual Conference on. IEEE*, 2017.
12. D. H. Nguyen, G. Yin, Coexistence and exclusion of stochastic competitive Lotka-Volterra models, *J. Differential Equations.* 262 (2017), no. 3, 1192-1225.
13. N.T. Dieu, D.H. Nguyen, N.H. Du, G. Yin, Classification of asymptotic behavior in a stochastic SIR model, *SIAM J. Appl. Dyn. Syst.* 15 (2016), no. 2, 1062-1084.
14. N.T. Dieu, D.H. Nguyen, N.H. Du, G. Yin, Protection zones for survival of species in random environment, *SIAM J. Appl. Math.* 76 (2016), no. 4, 1382-1402.
15. D. H. Nguyen, G. Yin, Modelling and analysis of switching diffusion systems: Past-dependent switching having a countable state space, *SIAM J. Control Optim.* 54 (2016), no. 5, 2450-2477
16. N.H. Du, D. H. Nguyen, G. Yin, Conditions for permanence and ergodicity of certain stochastic predator-prey models, *J. Appl. Probab.* 53 (2016), 187-202.

17. N.H. Du, D. H. Nguyen, G. Yin, Study of certain stochastic predator-prey models, *SIAM Conf. on Control and its Applications*, (2015) 408-415.
18. D. H. Nguyen, N. H. Du, G. Yin, Existence of stationary distributions for Kolmogorov systems of competitive type under telegraph noise. *J. Differential Equations* 257 (2014), no. 6, 2078-2101.
19. N. H. Du, D. H. Nguyen, Asymptotic behavior of Kolmogorov systems with predator-prey type in random environment. *Commun. Pure Appl. Anal.* 13 (2014), no. 6, 2693-2712.
20. N. T. Hieu, N. H. Du, P. Auger, D. H. Nguyen, Dynamical behavior of a stochastic SIRS epidemic model, *Math. Model. Nat. Phenom.* 10 (2015), no. 2, 56-73
21. N. H. Du, D. H. Nguyen, N. T. Dieu, On stability in distribution of stochastic differential delay equations with Markovian switching. *Systems Control Lett.* 65 (2014), 43-49.
22. D. H. Nguyen, A note on sufficient conditions for asymptotic stability in distribution of stochastic differential equations with Markovian switching. *Nonlinear Anal.* 95 (2014), 625-631.
23. H. T. Tuan, D. H. Nguyen, V. V. Khu, Dynamics of a stochastic predator-prey model with Beddington DeAngelis functional response. *Sci. Ser. A Math. Sci. (N.S.)* 22 (2012), 75-84.
24. T. T. Lan, D. H. Nguyen, Exponential stability of nontrivial solutions of stochastic differential equations. *Sci. Ser. A Math. Sci. (N.S.)* 21 (2011), 97-106.
25. D. H. Nguyen, N. H. Du, T. V. Ton, Asymptotic behavior of predator-prey systems perturbed by white noise. *Acta Appl. Math.* 115 (2011), no. 3, 351-370
26. N. H. Du, D. H. Nguyen, Dynamics of Kolmogorov systems of competitive type under the telegraph noise. *J. Differential Equations* 250 (2011), no. 1, 386-409.

### Preprints

1. D. H. Nguyen and G. Yin, A Class of Nonlinear Systems of Stochastic Differential Equations: Chemostat Models, Complete Characterization of Long-Time Behavior, Optimal Controls, and Applications to Wastewater Treatment, *submitted* (2018). <https://arxiv.org/abs/1710.07897>
2. D. H. Nguyen, N. H. Du and G. Yin, Limit cycles of dynamic systems under random perturbations with rapid switching and slow diffusion: A multi-scale approach, *submitted* (2017) <https://arxiv.org/abs/1707.06179>.

### Referee Services

---

- American Mathematical Society (MathSciNet) Reviewer
- Referee for: *Acta Mathematica Scientia*; *Advances in Difference Equations*; *ASME Journal of Computational and Nonlinear Dynamics*; *Applied Mathematics and Computation*; *Bulletin of Mathematical Biology*; *Discrete and Continuous Dynamical Systems - Series B*; *IET Control Theory & Applications*; *Journal of Differential Equations*; *Nonlinear Analysis: Hybrid Systems*; *Nonlinear Analysis: Theory, Methods and Applications*; *Physica A*; *Proceedings of the AMS*; *SIAM Journal on Control and Optimization*; *Statistics & Probability Letters*; *Stochastic Processes and their Applications*; *Systems & Control Letters*.

## Talks

---

- Workshop on Ecological and Biological Systems, The Institute for Mathematics and Its Applications, June 4, 2018, *Invited Talk*.
- Workshop on Stochastic Control, Computational Methods, and Applications, The Institute for Mathematics and Its Applications, May 10, 2018, *Invited Talk*.
- Department of Mathematics, North Dakota State University, January 18, 2018, *Invited Talk*
- Probability Seminar, Brown University, December 12, 2017, *Invited talk*.
- Department of Mathematics, University of Alabama, November 15, 2017, *Invited Talk*.
- SIAM Conference on Control and Its Applications, Pittsburgh, PA, July 10-12, 2017, *Invited Talk*.
- SIAM Great Lakes Spring Meeting, Oakland, MI, April 30, 2017, *Contributed Talk*.
- Probability Seminar, Wayne State University, April, 2017, *Invited Talk*.
- SIAM Great Lakes Spring Meeting, Dearborn, MI, April 30, 2016, *Contributed Talk*.
- The 5th National Conference on Probability and Statistics, May 23-25, 2015, Vinh, Vietnam *Plenary Talk*
- Central Spring Sectional Meeting Michigan State University, East Lansing, MI March 14-15, 2015, *Contributed Talk*.
- Applied Mathematics Conference, Oakland University, Rochester, MI, September 2014, *Contributed Talk*.
- VMS - SMF Joint Congress, Hue, August 20 - 24, 2012, *Invited Talk*.
- The 4th National Conference on Probability and Statistics, May 20-22, 2010, Vinh, Vietnam, *Contributed Talk*.
- International Workshop on Differential and Difference Equations: Theory, Numerics and Applications, October 29-31, 2009, Hanoi and Halong, Vietnam.

## Technical Skills

---

- Proficient in MAPLE & MATLAB computing
- Experience with R data analysis software

## Teaching Training

---

- *Teaching Mathematics in College* (Fall 2014, Wayne State University): A semester-long course focusing on presentation, test-writing, grading, classroom management, and use of technology.

## Teaching Experience

---

- Courses taught at University of Alabama:
  - *Theory Of Probability* (MATH 355), Fall 2018 (two sessions)

- Courses taught at Wayne State University:
  - *Elementary Functions* (MAT 1800), Fall 2015
  - *Elementary Introduction to Statistics* (STA 1020) Winter 2016
  
- Work as a lecturer in Hanoi University of Science: 2008-1013 teaching about 20 courses for math majors as well as non-math majors, including:
  - *Calculus, Analysis, Optimal control, Probability, Statistics.*