

## Nancy Rodríguez (January 2024)

---

CONTACT INFORMATION	<p>Department of Applied Mathematics University of Colorado Bolder 11 Engineering Dr Boulder, CO 80309</p> <p>Phone: (303) 492-5199 Fax: (303) 492-4066 E-mail: <a href="mailto:rodrign@colorado.edu">rodrign@colorado.edu</a></p>
EDUCATION	<p><b>University of California, Los Angeles</b>, Los Angeles, CA. Ph.D., Mathematics, June 2011. M.S., Mathematics, June 2008. <b>University of San Diego</b>, San Diego, CA. B.S., Mathematics, June 2006. <i>Summa Cum Laude</i>, <i>Phi Beta Kappa</i>. B.S./B.A Industrial and Systems Engineering, June 2006. <i>Summa Cum Laude</i>.</p>
ACADEMIC EMPLOYMENT	<p><b>University of Colorado at Boulder</b>, Boulder, CO. Assistant Professor of Mathematics, August 2018 - present. <b>University of North Carolina at Chapel Hill</b>, Chapel Hill, NC. Assistant Professor of Mathematics, July 2014 - July 2018. <b>Stanford University</b>, Stanford, CA. NSF Postdoctoral Fellow, June 2011 - June 2014. Co-director of <a href="#">Summer Undergraduate Research in Math</a>, January 2012 - March 2014.</p>
RESEARCH INTERESTS	<p>Non-linear PDEs, mathematical modeling, biological aggregation, mathematical biology and ecology, crime modeling, chemotaxis, population dynamics.</p>
PAPERS UNDER REVIEW	<p>1. C. Wang, T. Wessler, N. Rodríguez, and J. Brangingham, <i>The effect of protest management strategies of protesting activity and social tension: a mathematical perspective</i>, submitted to Proceedings of MathSEE Symposium, 30 pages (2024).</p>
REFEREED PUBLICATIONS	<p>1. Y. Bahid, O. Kutsenko, N. Rodríguez, and D. White, The statistical and dynamic modeling of the first part of the 2013-2014 Euromaidan protests in Ukraine: The Revolution of Dignity and preceding times, to appear in Plos One, 25 pages (2023). 2. N. Rodríguez and D. White, <i>An analysis of protesting activity and trauma through mathematical and statistical models</i>, to appear in Crime Science <b>17</b>, 17 (2023). 3. E. Ellefsen and N. Rodríguez, <i>Nonlocal Mechanistic Models in Ecology: Numerical Methods and Parameter Inference</i>, to appear in Applied Sciences, 19 pages (2023). 4. C. Cosner and N. Rodríguez, <i>On the Allee Effect and Directed Movement on the Whole Space</i>, to appear in Mathematical Biosciences and Engineering, 20 pages (2022). 5. N. Rodríguez, <i>What can Partial Differential Equations tell us about life?</i> To appear The UMAP Journal, 15 pages (2023). 6. A. Halev, K. Patel, N. Rodríguez, M. Tewari and L. Wong, <i>A model for wealth concentration: from an agent based system to a PDE</i>, To appear in AMS Proceedings of Symposia in Applied Mathematics, 30 pages (2021). 7. N. Rodríguez and M. Winkler, <i>On the global existence and qualitative behavior of one-dimensional solutions to a model for urban crime</i>, EJAM, Vol. 33 (5), pg. 1-41 (2021).</p>

8. A. B. T. Barbaro, N. Rodríguez, H. Yoldas, N. and Zamponi, *Analysis of a cross-diffusion model for rival gangs interaction in a city*, Comm. Math. Sci., Vol 19 (8), pg. 2139-2175 (2021).
9. E. Ellefsen and N. Rodríguez, *Efficiently finding steady states of nonlocal territorial models in ecology*, Journal of Applied Anal. and Comp., Vol 11 (6), pg. 2664-2686 (2021).
10. M. Bakhshi, A. Ghazaryan, V. Manukian, and N. Rodríguez, *Traveling wave solutions in a model for social outbursts in a tension-inhibitive regime*, Studies in Applied Mathematics, Vol 147 (2), pg. 650-674 (2021).
11. N. Rodríguez, Q. Wang, and L. Zhang, *Understanding the effects of on- and off-hotspot policing: Evidence of hotspot, oscillating and chaotic activities*, SIAM Dynamical Systems, Vol 20 (4), pg. 1882-1916 (2021).
12. C. Cosner and N. Rodríguez, *The Effect of Chemotactic Movement on the Allee Effect*, SIAM Applied Math, Vol 81 (2), pg. 404-433 (2021).
13. E. Ellefsen and N. Rodríguez, *On some theory of monostable and bistable pure birth-jump integro-differential equations*, Ecol. Compl., Vol 45, 100892, (2020).
14. C. Yang and N. Rodríguez, *Existence and Stability Traveling Wave Solutions for a System of Social Outbursts*, Journal of Math. Analysis & Appl., 494(1) 124583, (2021).
15. N. Rodríguez and M. Winkler, *Relaxation by nonlinear diffusion enhancement in a two-dimensional cross-diffusion model for urban crime propagation*, M3AS, 30(11):2105-2137, (2020).
16. A. Hassan, N. Rodríguez, and L. Wong, *Transport and concentration of wealth: modeling an amenities-based theory*, Chaos, Vol 30, 053110 (2020).
17. C. Topaz, M.-V. Ciocanel, P. Cohen, M. Ott, and N. Rodríguez, *Institute for the Quantitative Study of Inclusion, Diversity, and Equity (QSIDE)*, Notices of the AMS, (Feb 2020): 223-227.
18. N. Rodríguez and Y. Hu, *On the Steady-states of a two-species non-local cross-diffusion model*, Journal of Applied Analysis, Vol 26(1), pg. 1–19 (2020).
19. C. Yang and N. Rodríguez, *A Numerical Perspective on Traveling Wave Solutions in a System for Rioting Activity*, Appl. Math. and Comp., Vol 364 (2020).
20. G. Malanson and N. Rodríguez, *Traveling waves and spatial patterns from dispersal on homogeneous and gradient habitats*, Ecological Complexity, Vol. 33, pg. 57-65 (2018).
21. N. Rodríguez and G. Malanson, *Plant dynamics, birth-jump processes and sharp traveling waves*, Bulletin of Math Biology, Vol. 80, pg. 1655–1687 (2018).
22. L. Bonnasse-Gahot, H. Berestycki, M-A. Depuiset, M. B. Gordon, S. Roché, and N. Rodríguez, J-P. Nadal, *Epidemiological modelling of the 2005 French riots: a spreading wave and the role of contagion*, Scientific Reports, online publication 10.1038/s41598-017-18093-4 (2018).
23. H. Berestycki, N. Rodríguez, and L. Rossi, *Periodic cycles of social outburst*. Journal of Differential Equations, Vol. 264, pg. 163-196 (2018).
24. H. Berestycki and N. Rodríguez, *Non-local reaction-diffusion equations with a gap*. Discrete and Continuous Dynamical Systems-A, Vol. 27(2), pg. 685-723 (2017).
25. H. Berestycki and N. Rodríguez, *Analysis of a heterogeneous model for riot dynamics: the effect of censorship of information*. European Journal of Applied Mathematics, Vol. 27, Special Issue 03, pg. 554-582, (2016).
26. N. Rodríguez and L. Ryzhik, *The effect of social preference, mobility, and the environment on segregation*, Communications in Mathematical Sciences, Vol. 14, No. 2, pg. 363-387, (2016).

27. H. Berestycki, J-P. Nadal and N. Rodríguez, *A model of riots dynamics: shocks, diffusion and thresholds*, Networks and Heterogeneous Media, Vol. 10, No. 3, pg. 443-475, (2015).
28. N. Rodríguez, *Recent advances in mathematical criminology, comment on “Statistical physics of crime: A review, by M.R. D’Orsogna and M. Perc”*, Physics of Life Review, Vol. 12, pg. 38-39, (2015).
29. N. Rodríguez, *On an Integro-differential model for pest control in a heterogeneous environment*, Journal of Math. Biology, Vol 70, No. 5, pg. 1177–1206 (2015).
30. J. Bedrossian and N. Rodríguez, *Inhomogeneous Patlak-Keller-Segel models and aggregation equations with nonlinear diffusion in  $\mathbb{R}^d$* , Discrete and Continuous Dynamical Systems-B, Vol. 19, No. 24, pg. 1279–1309 (2014).
31. H. Berestycki, N. Rodríguez and L. Ryzhik, *Traveling wave solutions in a reaction-diffusion model for criminal activity*. Multiscale Modeling and Simulations, Vol. 11, Issue 4, pg. 1097-1126, (2013).
32. N. Rodríguez, *On the global well-posedness theory for a class of PDE models for criminal activity*, Physica D: Nonlinear Phenomena, pg. 191-200, (2013).
33. J. Bedrossian, N. Rodríguez and A. Bertozzi, *Local and global well-posedness for aggregation equations and Patlak-Keller-Segel models with degenerate diffusion*, Nonlinearity, Vol. 24, No. 6, pg. 1683-1714, (2011).
34. N. Rodríguez and A. Bertozzi, *Local existence and uniqueness of solutions to a PDE model for criminal behavior*, M3AS, special issue on Math. and Complexity in Human and Life Sci., Vol 20, Issue supp01, pg. 1425–1457, (2010).
35. A.P. Velo, G.A. Gazonas, E. Bruder and N. Rodríguez, *Recursive dispersion relations in one-dimensional periodic elastic media*. SIAM Journal on Applied Mathematics, Vol. 69, No. 3, pg. 670–689, (2007).

#### PLENARY TALKS

1. *TBD*, Mathematical Congress of the Americas (MCA), July 2025.
2. *TBD*, Joint Alabama-Florida Conference, May 2024
3. *A journey through the use of mathematical models to gain insight into ecological and sociological phenomena*, KIT Center MathSEE Symposium on Applications of Mathematical Sciences, Karlsruhe, Germany, September 2023.
4. *A journey through the use of mathematical models to gain insight into ecological and sociological phenomena*, SIAM Dynamical Systems, Portland, Oregon, May 2023.
5. *On local and non-local animal movement*, SIAM Northern States meeting, Utah State University, Spring 2023.
6. *A story on the ideal free distribution, the Allee effect, and competition through the lens reaction-advection-diffusion equations*. 47th Annual Mathematics Conference, Miami University of Ohio, September 2019.
7. *Partial Differential Equations as Models for Social Complex Systems*. SIAM Nonlinear Waves and Coherent Structures (Anaheim, CA), June 2018.
8. *On reaction-advection-diffusion models for multi-species segregation*. 46th Annual John H. Barrett Memorial Lectures, Knoxville, TN., May 2016.
9. *A model for riot dynamics: shocks, diffusions, and thresholds*. Latinos in the Mathematical Sciences Conference, Los Angeles, CA. April 9, 2015.

#### SELECTED INVITED TALKS (2014 ONWARD)

1. *PDE models in the Ecology*, Math Bio Workshop on Stochastic Spatial Dynamics, Logan, Utah, 2023.
2. *PDE models in the sciences*, Series on Nonlinear Waves and Coherent Structures, Webinar, April 12, 2023.
3. *Using Mathematical Models to Understand Protesting Activity and Trauma*, Dynamics Days, Jan. 9-11, 2023.

4. *The effect of directed movement on the Allee effect*, AMS Fall Western Sectional Meeting, Oct. 22-24, 2022.
5. *Analyzing movement strategies in social species*, SIAM NLWCS, Aug. 30-Sept. 2, 2022.
6. *Analyzing movement strategies in social species*, JMM, April 6, 2022.
7. *Prevention and propagation of protesting activity*, IMACS, March 30-April 1, 2022.
8. *Analyzing movement strategies in social species*, SIAM Analysis of PDEs, March 14-18, 2022.
9. *The effect of directed movement on the Allee effect*, Mean Field Models for Interacting Agents, November 2021.
10. *The effect of directed movement on the Allee effect*, SIAM Annual, July 2021.
11. *Modeling and Analysis of Wealth Dynamics*, SIAM DS21, Virtual, May 2021.
12. *Mathematical models in social complex systems*, Criminology and Criminal Justice Working Group Meeting, CU Boulder, April 2021.
13. *On the relaxation of solutions to a crime model with overcrowding effect*, SIAM Conference on Nonlinear Waves and Coherent Structures (cancelled due to COVID19), Bremen, Germany, July 2020.
14. *An SIR-Hawkes hybrid model for gun violence*, 2020 ASC Annual Meeting, (cancelled due to COVID19), Washington DC, November, 2020.
15. *A story on the ideal free distribution, the Allee effect, and competition through the lens reaction-advection-diffusion equations*. II Simposio de Matematica Pura y Aplicada, Arequipa, Perú, December 2019 (virtual talk).
16. *A story on the ideal free distribution, the Allee effect, and competition through the lens reaction-advection-diffusion equations*. SIAM PDE Conference, La Quinta, CA December 2019.
17. *Plant dynamics: a birth-jump approach*. ICIAM, Valencia, SP, July 2019.
18. *Nonlocal models for birth-jump processes*. SIAM DS19, Salt Lake, UT, May 2019.
19. *PDEs as models for social complex systems*. Penn State, PA. Feb 2019.
20. *Plant dynamics: a birth-jump approach*. CMS Meeting, Vancouver, BC. Dec 2018.
21. *Partial Differential Equations as Models for Social Complex Systems*, Oberwolfach Workshop: Differential Equations arising from Organising Principles in Biology, Oberwolfach, Germany, October 2018.
22. *Plant dynamics: a birth-jump approach*. ICM Sat. Conf., Miami, FL. July 2018.
23. *Position-Jump and Birth-Jump Processes*. AIM Workshop on Nonlocal Differential Equations in Collective Behavior, San Jose, CA., June 2018.
24. *A model for riot dynamics: shocks, diffusion and thresholds*. Tianfu conference in PDEs, Chengdu, China., June 15, 2017.
25. *Heterogeneous models with non-local diffusion*. AIMS sectional meeting, Charleston, SC., March 2016.
26. *On reaction-advection-diffusion models for multi-species segregation*. CMO-BIRS, Oaxaca, Mexico., June 2016.
27. *Periodic outbursts of social activity*. KI-Net Conference on Collective Dynamics in Biological and Social Systems, Durham, NC., November 19-22, 2015.
28. *On the steady-state solutions for a non-local system with cross-diffusion*. The Society for Mathematical Biology, Atlanta, GA., June, 2015.
29. *On the global well-posedness of a two species interaction model with cross-diffusion*. Workshop for Women in Analysis and PDE, Minneapolis, MN. , May 29, 2015.
30. *A model for riot dynamics: shocks, diffusions, and thresholds*. AMS Sectional Meeting, Washington D.C. March 7, 2015.

31. *A stochastic model of riots: diffusion and thresholds*. Modeling and Control in Social Dynamics, Camden, NJ. October 6, 2014.
32. *The effect of social preference, mobility, and the environment on segregation*. Modeling and Control in Social Dynamics, Baltimore, MD. October 15, 2013.
33. *On a nonlocal reaction diffusion equation: applications in ecology, neural networks, and urban crime*. SACNAS 2013, San Antonio, TX. October 5, 2013.
34. *Non-local effects in social phenomena*. BIRS: PDEs in the social and life science, Banff, Canada. April 2, 2013.
35. *Hotspots and diffusion of criminal activity*. CAMS-EHESS, Paris, France. February 13, 2013.
36. *Invasion of hotspots; traveling wave solutions to a reaction-diffusion equation*. 7th Biannual Blackwell-Tapia Conference, ICERM, RI. November 10, 2012.
37. *Commuter criminals and integro-differential equations*. PIMS Hot Topics Workshop on Computational Criminology, Vancouver, BC, Canada. Sep. 20, 2012.
38. *Invasion of hotspots; traveling wave solutions to a reaction-diffusion equation*. BIRS, Banff, CA. July 23-27, 2012.
39. *Global theory for an aggregation equation with degenerate diffusion*. ICIAM, Vancouver, BC, Canada. July 18-22, 2011.
40. *Existence and blow-up of an aggregation equation with degenerate diffusion*. JMM, New Orleans, LA. January 5-9, 2011.
41. *Local existence and blow-up of an aggregation equation with degenerate diffusion*. IPAM Optimal Transport Reunion, Lake Arrowhead, CA. December 12-17, 2010.
42. *Reaction-diffusion models of crime in heterogeneous urban environments*. The American Society of Criminology Annual Meeting, San Francisco, CA. November 19, 2010.
43. *A PDE model for criminal behavior: existence theory*. Infinite Possibilities Conference, Los Angeles, CA. March 2010.
44. *Local existence/uniqueness of solutions to a PDE model for criminal behavior*. Workshop on Analysis and Modeling of Crime, Santiago, Chile. Jan. 4-7, 2010.

INVITED SEMINAR TALKS	Michigan State University Mathematics Colloquium,	April 2024
	University of Huston Mathematics Colloquium,	March 2024
	University of British Colombia Math Biology Seminar,	October 2023
	KU AWM Lecture	November 2021
	Penn State University	September 2021
	Stanford University(virtual)	May 2021
	University of Iowa (virtual)	April 2021
	Florida Atlantic (virtual)	March 2021
	University of Pennsylvania (virtual)	Feb 2021
	University of Washington (virtual)	April 2020
	Colorado School of Mines (to be rescheduled to to COVID19)	March 2020
	Fields Institute (to be rescheduled to to COVID19)	March 2020
	Colorado State University	December 2019
	University of Arizona	November 2019
	Tulane University	October 2019
	University of Pennsylvania	November 2018
	Colorado School of Mines	January 2018
	University of Miami	April 2017
	University of Alberta	October 2016
	Brown University	February 2016
	University of Delaware	November 2015

	Pontifical Catholic University of Rio de Janeiro	May 2015
	North Carolina State University	December 2014
	Duke University	October 2014
	University of Illinois at Urbana Champaign	January 2014
	University of California at Merced	January 2014
	Purdue University Colloquium	December 2013
	UNC Chapel Hill Colloquium	November 2013
	Purdue University Seminar	July 2013
	Rice University Colloquium	April 2013
	University of California at Berkeley PDE Seminar	November 2012
	Santa Clara University Colloquium	May 2012
	University of California at Santa Cruz Colloquium	January 2012
	University of California at Riverside	April 2011
	University of San Diego Seminar	February 2011
	Universidad de Santiago de Chile PDE Seminar	January 2010
SELECTED SERVICE TALKS	<i>What Calculus can tell us about life.</i>	June 2021
	Oglethorpe University High school student summer camp, virtual.	
	<i>What Calculus can tell us about life.</i>	March 2021
	SIAM Front Range student conference, Boulder, CO.	
	<i>What Calculus can tell us about life.</i>	February 2017
	UNC Office of Undergraduate Research, Methods of Inquiry, Chapel Hill, NC.	
	<i>What Calculus can tell us about life.</i>	October 2016
	Graduate Research Opportunities for Women, Northwestern Univ., Evanston, IL.	
	<i>Calculus in social, biological, and ecological phenomena.</i>	June 2016
	Girls Talk Math, Chapel Hill, NC.	
	<i>Calculus in social, biological, and ecological phenomena.</i>	April 4, 2016
	Girls Advancing STEM Conference, Durham, NC.	
	<i>Modeling aggregation.</i>	July 27, 2014
	A talk tailored for students in the MSRI-UP program, Berkeley, CA.	
	<i>American Pi: Changing the Stereotypes in Mathematics.</i>	July 19, 2013
	Keynote for ADVANCE PRiME, Lafayette, IN.	
	<i>Criminal activity, ecology and nerve pulse propagation: my life in math.</i>	April 2013
	A talk tailored towards women and minorities in STEM, Houston, TX.	
AWARDS AND FELLOWSHIPS	<i>Modeling Urban Crime.</i>	October 25, 2012
	A talk tailored towards undergraduates, Palo Alto, CA.	
	Stanford University	
	• NSF Mathematical Sciences Postdoctoral Fellowship	June 2011-June 2014
	• AWM-NSF Mentoring Travel Grant	April 2013
	• USD McNair Doctoral Achievement Award	May 2012
	University of California, Los Angeles	
	• UCLA Graduate Division Fellowship	2010-2011
	• NSF VIGRE Fellowship	2009-2010
	• Ford Foundation Fellowship	2006-2009
	University of San Diego	
	• Outstanding Academic Achievement in Mathematics	May 2006
	• Outstanding Service Award in Mathematics	May 2006
	• ISE Outstanding Senior of the Year	2006
	• McNair Scholar	2004-2006
	• Goldwater Fellow	2003-2006

GRANTS  
AWARDED

- AFOSR-MURI \$ **1,245,588**, *Role:* co- PI, 2022-2027.  
*Title:* *Learning Dynamics and Detecting Causal Pathways in Coupled Online-Offline Systems*
- NSF CAREER Award: DMS Applied Mathematics: \$ **430,000**, *Role:* PI, 2021-2026.  
*Title:* *CAREER: Mathematical Frameworks and Theory for Conceptual Models in Economics, Ecology and Criminology*
- NSF DMS Applied Mathematics: \$**301,796**, *Role:* PI, 2019-2021  
*Title:* Nonlinear and Non-local Models in Social and Ecological Systems.
- UNC Junior Faculty Development Award: \$**7,500**.
- UNC FIRE Grant: \$**25,000**.  
*Title:* Data-driven Modeling of Gentrification.
- NSF DMS Applied Mathematics: \$**169,999**, *Role:* PI, 2014-2018  
*Title:* Models for Social, Ecological, and Biological Systems: Narrowing the Gap Between Theory and Applications.
- AWM-NSF Mentoring Travel Grant: \$**4,600**, *Role:* Co-PI 2014.  
*Title:* Frac. Diff. and Reaction Systems: Globalization Effects on Criminal Activity.
- NSF Mathematical Sciences PRF: \$**135,000**. *Role:* PI 2011-2014.  
*Title:* Nonlinear PDE models for Urban Crime.

TEACHING  
EXPERIENCE

University of Colorado Boulder	Term	Students	Rating
APPM 3310: Matrix Methods	S24	38	NA
APPM 3310: Matrix Methods	F23	47	NA
APPM 2360: Differential Equations/Linear Algebra	F22	63	NA
APPM 5440: Analysis II	F22	11	NA
APPM 5450: Analysis II	S22	12	NA
APPM 5450: Analysis I	F21	13	NA
APPM 2360: Differential Equations/Linear Algebra	F21	57	NA
APPM 5450: Analysis II	S21	16	NA
APPM 5450: Analysis I	F20	14	NA
APPM 2360: Differential Equations/Linear Algebra	F20	52	NA
APPM 5450: Analysis II	S20	14	4.5/6.00
APPM 5450: Analysis II	S19	14	4.5/6.00
APPM 2360: Differential Equations/Linear Algebra	S19	102	4.51/6.00
APPM 5450: Analysis I	F18	17	4.43/6.00
<b>University of North Carolina at Chapel Hill</b>			
MATH 751: Partial Differential Equations	S17	5	N/A
MATH 529: PDEs and Complex Analysis	S17	50	4.18/5.0
MATH 383H: Honors Differential Equations	S17	19	4.24/5.0
MATH 769: Graduate Math Modeling	S17	7	4.33/5.0
MATH 383: Differential Equations	S16	52	3.99/5.00
MATH 769: Graduate Math Modeling	S16	6	4.08/5.0
MATH 383: Honors Differential Equations	S15	17	4.29/5.0
MATH 383: Differential Equations	F14	31	3.97/5.0
<b>Stanford University</b>			
Linear Algebra & Multivariable Calculus	F12	2 classes, ~ 50/class	N/A
Accelerated Calculus & Calculus I	F11	2 classes, ~ 50/class	N/A
<b>St. Quentin Prison, CA.</b>			
MATH 50B: Developmental Math (Lead Instructor)	F13	~ 25	N/A
MATH 50B: Developmental Math	S13	~ 25	N/A

NA: not applicable due to change in FCQ forms.

OTHER TEACHING EXPERIENCE	<p><i>Core team member.</i> AIM Summer School on Dynamics, Data and the COVID 19 Pandemic, Virtual, June 22-July 31, 2020.</p> <p><i>Mini-Course instructor.</i> CIMPA: Mathematical Models in Biology and Related Applications of Partial Differential Equations, Universidad de la Havana, Cuba, June 2019.</p> <p><i>Mini-Course instructor.</i> Modern Math Workshop, SACNAS 2014, Los Angeles, CA., October 2014.</p>
GRADUATE STUDENT ADVISING	<p>Madi Yerlanov (<b>PhD</b>, CU Boulder - APPM), 3rd year.</p> <p>Yassin Bahid (<b>PhD</b>, CU Boulder - APPM), 3rd year.</p> <p>Trever Manders (<b>Masters</b>, CU Boulder - Math Department), graduated 2021.</p> <p>David Sterns (<b>Masters</b>, CU Boulder - APPM), graduated 2021.</p> <p>Erin Ellefsen (<b>PhD</b>, CU Boulder - APPM), graduated 2022.</p> <p>Lyndsey Wong (<b>PhD</b>, CU Boulder - APPM): graduated 2022.</p> <p>Caroline Yang (<b>PhD</b>, UNC Chapel Hill): graduated 2018.</p>
DISSERTATION COMMITTEES	<p>Corbit Sampson (<b>PhD</b>, CU Boulder- APPM).</p> <p>Sam Zhang (<b>PhD</b>, CU Boulder- APPM).</p> <p>Sarah Wellberg (<b>PhD</b>, CU Boulder- Education).</p> <p>Heather Cihak (<b>PhD</b>, CU Boulder- APPM).</p> <p>Daniel Messenger (<b>PhD</b>, CU Boulder- APPM).</p> <p>Yifeng Mao (<b>PhD</b>, CU Boulder- APPM).</p> <p>Nicholas Barendregt (<b>PhD</b>, CU Boulder- APPM).</p> <p>Subekshya Bidari (<b>PhD</b>, CU Boulder- APPM).</p> <p>Amanda Hampton (<b>PhD</b>, CU Boulder- APPM).</p> <p>Timothy Thorn, (<b>Masters</b>, CU Boulder - APPM).</p> <p>Ram Ekstrom, (<b>Masters</b>, CU Boulder - Mathematics).</p> <p>Harry Dudley, (<b>PhD</b>, CU Boulder- APPM).</p> <p>Jackeline Wentz, (<b>PhD</b>, CU Boulder- APPM).</p> <p>Joshua Aurand, (<b>PhD</b>, CU Boulder- APPM).</p> <p>Hao Xu, APPM (<b>PhD</b>, CU Boulder- APPM).</p> <p>Sabina Altus APPM (<b>PhD</b>, CU Boulder- APPM).</p> <p>Nikhil Krishnan (<b>Masters</b>, CU Boulder- APPM).</p> <p>Claudia Falcon (<b>PhD</b>, UNC Chapel Hill), graduated 2017.</p> <p>Zeliha Kilic (<b>PhD</b>, UNC Chapel Hill), graduated 2018.</p>
IQ BIO ROTATIONS	<p>Vanessa Maybruck (<b>PhD</b>, (<b>PhD</b>, CU Boulder- APPM).</p> <p>Casey Middleton (<b>PhD</b>, (<b>PhD</b>, CU Boulder- CS).</p> <p>Kate Bubar (<b>PhD</b>, (<b>PhD</b>, CU Boulder- APPM).</p>
UNDERGRADUATE STUDENT ADVISING	<p><b>Applied Math Department, University of Colorado Boulder.</b></p> <p>Jonathan Shaw, Hannan Shahba, Anna Hendircks, Lucas Webb, Alison Reeves, Scott Baker, David Sterns, Abigail Hause, Amanda Liddle.</p> <p><b>Math Department, University of North Carolina Chapel Hill.</b></p> <p>Yi Hu, Avishair Halve, Keshav Patel, Shendung Sun, Ali Hassan, Sean Catangui.</p>
JOURNAL REFEREE	<p>Nonlinearity; SIAM Journal on Mathematical Analysis; Nonlinear Analysis Series A: Theory, Methods and Applications; Discrete and Continuous Dynamical Systems; European Journal of Applied Mathematics; Communications in Math Sciences; International Journal of Bifurcation and Chaos; Journal of Mathematical Biology; Journal of Differential Equations; Communications on Pure and Applied Analysis; Physica D: Nonlinear Phenomena; PLOS ONE; Annales Henri Poincaré; SIAM Journal of Applied; Foundations of Data Science; Math; MDPI.</p>



COMMITTEE  
SERVICE

**University of Colorado Boulder**

- Faculty search committee, Spring 2021
- Colloquium co-chair, Spring 2020.
- Colloquium chair, Fall 2019.
- Graduate Committee associate chair, Fall 2019 – present.
- Graduate Committee member, Fall 2018.
- Analysis Prelim Committee chair, Jan 2019, Aug 2019, Jan 2021, Jan 2022, & Jan 2023.
- Awards Committee member, Fall 2019 – present.
- Affiliated Committee member, Fall 2019 – present.

**University of North Carolina Chapel Hill**

- Undergraduate Committee member, Fall 2016 - Spring 2017.
- Math Methods Committee member, Spring 2017.
- Analysis Committee member, Fall 2014- Fall 2016.

UNIVERSITY  
SERVICE

- NSF CAREER Commit-to-Submit Writing Program Kickoff Workshop *Panelist*, February 2021.
- LEAP: Thriving in the First Year: What I Wish I had Known, *Panelist*, September 2021.
- LEAP: Thriving in the First Year: What I Wish I had Known, *Panelist*, September 2020.
- TCP Inclusion and Diversity Panel, *Panelist*, October 2019.
- IQ Biology orientation talk, August 2019.
- UNC Science Fair, April 2017.
- Recruited UNC's Chancellor's Science Scholars and Morehead Scholars, 2014-2017.
- Interviewing Member for UNC's Chancellor's Science Scholars, Spring 2015/2016.

OTHER SERVICE

- NSF-DMS Panel, Spring 2023.
- APPM Teaching Excellence Seminar, *Panelist*, Nov. 14, 2022.
- NSF-DMS Panel, Fall 2021.
- NSF-DMS Panel, Spring 2021.
- AMS short course: "Mathematical and Computational Methods for Complex Social Systems", *Panelist*, JMM, Washington D.C., Jan. 2021.
- NSF-DMS Panel, Spring 2020.
- IEEE Big Data Workshop on Data Science for Smart and Connected Communities, Program Committee member, Atlanta, GA., December 2020.
- "So you are (want to be) a Postdoc: now what?", *Panelist*, JMM 2020.
- NSF-DMS Panel, Spring 2020.
- UNC Science Fair, April 2017.
- Recruited UNC's Chancellor's Science Scholars and Morehead Scholars, 2014-2017.
- NSF-DMS Panel, Spring 2016.
- Interviewing Member for UNC's Chancellor's Science Scholars, Spring 2015/2016.
- Latinos in Mathematics Conference, IPAM, Los Angeles, CA. *Member of Organizing Committee*, Nov. 2013 - April 11, 2014.
- Beatrice Yormark Distinguished Visitor Lecture, Stanford, CA. *Co-organizer*, Fall 2011–Fall 2014.

	<ul style="list-style-type: none"> <li>• ¿Así Que Quieres Ser un Matemático? <i>A Panel Discussion with Latino/a Mathematicians</i>, Los Angeles, CA. <i>Panel Member</i>, April, 2013.</li> <li>• Pacific Coast Undergraduate Math Conference, Los Angeles, CA. <i>Graduate Panel</i>, March 2010.</li> <li>• Infinite Possibilities Conference 2010, Los Angeles, CA. <i>Invited Panelist</i>, March 2010.</li> <li>• <a href="#">UCLA Latinas Guiding Latinas</a>, Los Angeles, CA. <i>Volunteer</i> Sep. 2006 – June 2008.</li> </ul>
WORKSHOPS AND SPECIAL SESSIONS ORGANIZED	<ul style="list-style-type: none"> <li>• BIRS Workshop: New Trends in Fluids and Collective Dynamics, July 24-28, 2023.</li> <li>• Applied Mathematics skills Improvement for Graduate studies Advancement: AMIGAs at IPAM, July 10 - 14, 2023.</li> <li>• BIRS Workshop: Celebrating Women in Complex and Nonlinear Systems, Sep. 19-23, 2022.</li> <li>• ICERM: Interdisciplinary Network Analysis Methods for Analyzing Social Systems, Jun 27 - July 1, 2022.</li> <li>• ICERM Mathematical &amp; Computational Approaches to Social Justice Workshop, June 27-July 1, 2022.</li> <li>• Recent Advances in cross-diffusion and population models, SIAM Conference on Analysis of Partial Differential Equations, March, 2022.</li> <li>• Statistics and Data Science special session, co-organizer, Latinx in the Mathematical Sciences Conference, 2022.</li> <li>• Celebrating Women in Complex Systems, co-organizer, Banff, September 2022.</li> <li>• Mathematical and Computational Approaches to Social Justice, co-organizer, ICERM, March 2021.</li> <li>• AMS special session: “Special Session on Women of Color in Applied Math and Analysis,” co-organizer, JMM, Washington D.C., Jan. 2021.</li> </ul>
EDITORSHIPS	<ul style="list-style-type: none"> <li>• Co-editor of Special Issue on Mathematics and Society for Journal of Humanistic Mathematics</li> </ul>
OUTREACH	<ul style="list-style-type: none"> <li>• Family Science Outreach Night, Barney Ford Elementary (over 200 participants), January 18, 2024.</li> <li>• Family Science Outreach Night, Munroe Elementary (over 100 participants), November 14, 2023.</li> <li>• Summer Research Experience with High School Students, Summers 2022 &amp; 2023</li> <li>• Teen Science Café (partnership through El Centro Amistad), New Vista High School, May 18, 2022.</li> <li>• Teen Science Café, Peak-to-Peak High School, May 12, 2022.</li> <li>• Teen Science Café, Lafayette Public Library, April 28, 2022.</li> </ul>
AFFILIATIONS	<ul style="list-style-type: none"> <li>• Faculty Leadership Institute Fellow, Academic Year 2022-2023.</li> <li>• Interdisciplinary Quantitative Biology Program.</li> <li>• Society for the Advancement of Chicanos and Native Americans in the Sciences.</li> <li>• Institute for the Quantitative Study of Inclusion, Diversity, and Equity</li> </ul>
TRAININGS & LEADERSHIP	<ul style="list-style-type: none"> <li>• ASSETT’s Summer Course Design Workshop, May 2020.</li> <li>• Inclusive Excellence in the Graduate Admissions Process, Fall 2019.</li> <li>• LEAP Introductory Leadership Workshop, Spring 2020.</li> </ul>