CURRICULUM VITAE
JENNIE D'AMBROISE

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YouTube Channel: goo.gl/exBNhM

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Computer & Information Systems
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EDUCATION

Ph.D. Mathematics 2010, University of Massachusetts at Amherst
Dissertation: *Generalized EMP and non-Linear Schrödinger-type reformulations of some scalar field cosmological models*,
Advisor: Floyd L. Williams

B.Sc. Mathematics 2003, University of Massachusetts at Amherst
Honors Thesis: *Cryptographic Methods*,
Advisor: Siman Wong
Honors: Magna Cum Laude

EXPERIENCE

2015 - now Assistant Professor, SUNY Old Westbury
2013 - 2015 Visiting Assistant Professor, Amherst College
2011 - 2013 Visiting Assistant Professor, Bard College
2010 - 2011 Assistant Professor, University of Minnesota at Morris (UMM)
2008 - 2010 Lecturer, University of Massachusetts at Amherst (UMass)
2003 - 2008 Teaching Associate, University of Massachusetts at Amherst

RESEARCH INTERESTS

Nonlinear evolution equations, PDEs, Mathematical Physics, Numerical and exact methods, Mathematical aspects of quantum theories, $\mathcal{PT}$-symmetric systems

PEER-REVIEWED PUBLICATIONS ($*$ WITH UNDERGRADUATE STUDENT)

15. J. D'Ambroise, D. J. Frantzeskakis, and P. G. Kevrekidis, *Travelling dark-bright solitons in a reduced spin-orbit coupled system: application to BEC*, Romanian Rep. in Phys. **70** (2018), 503, arXiv:nlin/1710.03270.

14. T. M. Bersano, V. Gokhroo, M. A. Khamehchi, J. D'Ambroise, D. J. Frantzeskakis, P. Engels, and P. G. Kevrekidis, *Three-Component Soliton States in Spinor $F = 1$ Bose-Einstein Condensates*, Phys. Rev. Lett. **120** (2018), 063202, arXiv:cond-mat/1705.08130.

13. J. D'Ambroise and F. L. Williams, *Elliptic function solutions in Jackiw-Teitelboim dilaton gravity,* Adv. Math. Phys. (2017), 2154784, arXiv:nlin/1705.08585.

12. J. D'Ambroise and P. G. Kevrekidis, *Existence, Stability & Dynamics of Nonlinear Modes in a 2d Partially $\mathcal{PT}$ Symmetric Potential*, Applied Sciences **7** No. 3, (2017), 223, arXiv:nlin/1701.00553.

11. J. D'Ambroise, M. Salerno, P. G. Kevrekidis, and F.Kh. Abdullaev, *Multidimensional discrete compactons in nonlinear Schrödinger lattices with strong nonlinearity management*, Phys. Rev. A **92** (2015), 053621, arXiv:nlin/1508.03008.

10.* J. D'Ambroise, P. G. Kevrekidis, and D. Law, *Asymmetric wave propagation through saturable nonlinear oligomers*, Photonics **1** No. 4 (2015), 390, arXiv:nlin/1412.4856.

9. J. D'Ambroise, P. G. Keverekidis and B. A. Malomed, *Staggered $\mathcal{PT}$-symmetric ladders with cubic nonlinearity*, Phys. Rev. E **91** (2015), 033207, arXiv:nlin/1409.7413.

8. J. D'Ambroise, S. Lepri, B. A. Malomed and P.G. Keverekidis, *$\mathcal{PT}$-symmetric ladders with a scattering core*, Phys. Lett. A **378** No. 38-39 (2014), 2824, arXiv:nlin/1407.1086.

7. J. D'Ambroise, P. G. Kevrekidis and B. A. Malomed, *Quasi-energies, parametric resonances, and stability limits in ac-driven $\mathcal{PT}$-symmetric systems*, Chaos **24** (2014), 023136, arXiv:nlin/1308.3245.

6. J. D'Ambroise, P. G. Kevrekidis and S. Lepri, *Eigenstates and instabilities of chains with embedded defects*, Chaos, **23** No. 2 (2013), p 023109 - 023109-10, arXiv:nlin/1211.5707.

5. J. D'Ambroise, P. G. Kevrekidis and S. Lepri, *Asymmetric wave propagation through nonlinear PT-symmetric oligomers*, Journal of Physics A: Mathematical and Theoretical **45** No. 44 (2012), 444012, arXiv:nlin/1202.4483.

4. J. D'Ambroise and F. L. Williams, *Parametric solution of a certain nonlinear differential equations in cosmology,* Journal of Nonlinear Mathematical Physics, **18** No. 2 (2011), 269-278 arXiv:gr-qc/1202.4422.

3. J. D'Ambroise and F. L. Williams, *A dynamic correspondence between FRLW cosmology with cosmological constant and Bose-Einstein condensates*, Journal of Mathematical Physics, **51** No. 6 (2010), 062501-062511, arXiv:math-ph/1007.4237.

2. J. D'Ambroise, *A Schrödinger formulation of Bianchi I scalar field cosmology*, International Journal of Pure and Applied Mathematics, **42** No. 3 (2008), 405-410,arXiv:hep-th/0711.3916.

1. J. D'Ambroise and F. L. Williams, *A nonlinear Schrödinger type formulation of FRLW scalar field cosmology,* International Journal of Pure and Applied Mathematics, **34** No. 1 (2007), 117-126, arXiv:hep-th/0609125.

Conference Proceedings

3. J. D'Ambroise and F.L. Williams, *Parametric solution of certain nonlinear differential equations in cosmology II* Proc. of Sci. (2012), Invited Contribution for 7th International Conference on Math. Methods in Physics (ICMP), arXiv:gr-qc/1208.4812.

2. J. D'Ambroise, *EMP reformulations of Einstein's equations as an application of a property of suitable second order differential equations*, conference proceedings for Lie Theory and its Applications to Physics, Varna Bulgaria, June 2009.

1. J. D'Ambroise, *Applications of elliptic and theta functions to Friedman-Robertson-Lemaître-Walker cosmology with cosmological constant*, A Window Into Zeta and Modular Physics, Cambridge University Press (2010) arXiv:gr-qc/0908.2481.

Unpublished Papers

2.* F. Kh. Abdullaev, J. D'Ambroise, P. G. Kevrekidis and Y. N. Truong Vu, *Some case example exact solutions for quadratically nonlinear optical media with $\mathcal{PT}$-symmetric potentials.*, arXiv:nlin/1501.00519.

1. J. D'Ambroise, *EMP and linear Schrödinger models for a conformally Bianchi I cosmology*, arXiv:hep-th/0809.4817.

Undergraduate Project Supervision

- *CSTEP Internship Supervisor: Notesheet Project*
  - Sum 18 · Supervised 2 students making day-to-day guided notesheets for various undergraduate classes
- *Senior Project Primary Advisor*
  - F12 - S13 · Emily Carlson, *A Model of Charge Transport in a Dye-Sensitized Solar Cell*, at Bard College
  - F11 - S12 · Jeannette Benham, *Auditory Perception in Flatland: The Physical Applicability of a Two-Dimensional Cochlear Model*, at Bard College
- *Senior Project Non-Primary Advisor*
  - F12 · Board Member for Grant Anderson, at the Bard College Prison Initiative
  - F12 · Board Member for John Aufioros, at the Bard College Prison Initiative
  - S11 · Secondary Advisor for Nick Grieme, *Finite-Element Method*, at UMM

TEACHING AWARDS

- May 2010 · Department of Mathematics and Statistics Teaching Award, UMass Amherst
- Apr 2009 · Residential First Year Experience Student Choice Award, UMass Amherst
- Apr 2007 · University of Massachusetts Distinguished Teaching Award (among two TAs university-wide)

FUNDS

- Spring 2016 · Faculty Development Grant, SUNY Old Westbury (for ipad for video creation for blended course)
- Spring 2014 · Project in Innovative Curriculum and Teaching (PICT) Grant, Amherst College
- 2012 - 2014 · AMS-Simons Travel Grant
- Jul 2012 · AWM Workshop Speaker, at SIAM Annual Meeting AWM Workshop, Minneapolis, MN
- Jan 2009 · AWM Workshop Grant, Joint Mathematics Meetings, Washington D.C.
- Aug 2007 · Graduate Student Travel Grant, UMass Univ. and UMass Dept of Math & Stats
- May 2007 · Summer Research Assistantship, UMass Dept of Math & Stats

ONLINE FACULTY DEVELOPMENT COURSES

- Sum 2018 · Completed: Collaborative Online International Learning (COIL) Course Orientation, administered by SUNY COIL Center
- Sum 2017 · Completed: Grants and Proposals, administered by The Institute for Writing and Learning
- Spring 2016 · Completed with Distinction: Teaching and Learning Certificate for New Faculty, administered by SUNY Center for Professional Development
  See online portfolio: https://sites.google.com/site/jenniedambroiseeportfolio
- Spring 2016 · Completed with Distinction: Quality by Design Course, administered by SUNY Center for Professional Development
- S16-F16 · Completed: Online, Hybrid, and Blended Training, administered by SUNY Old Westbury with facilitator Chandra Shehigian

TEACHING EXPERIENCE († videos, ⋆ MyMathLab, ∗ Mathematica, △ WebWork, ○ WebAssign, ⊙ OER Open Ed. Res.)

- *SUNY Old Westbury*

F18	⋆† Differential Calculus	⋆† Integral Calculus	○ † ⊙ Multivariable Calculus
S18	† PreCalculus	† Integral Calculus	△ Differential Equations
F17	⋆† Differential Calculus	† PreCalculus	○† Business PreCalculus
S17	· Differential Equations	⋆† Integral Calculus	
F16	⋆ PreCalculus	⋆ Differential Calculus	⋆† Integral Calculus
S16	· Differential Equations	⋆ Integral Calculus	
F15	⋆ PreCalculus	⋆ Differential Calculus	⋆ Integral Calculus

- *Amherst College*

S15	⋆∗ Linear Algebra, 2 sections	
F14	· Complex Analysis	⋆† Differential Calculus
S14	· Intro. to Analysis	⋆† Differential Calculus
F13	· Intro. to Analysis	⋆ Multivariable Calculus

- *Bard College*

S13	∗ ODE/PDE	∗ Integral Calculus, 2 sections
F12	· Linear Algebra with ODE	⋆ Integral Calculus, 2 sections
S12	· Complex Analysis	⋆ Integral Calculus, 2 sections
F11	· Ordinary Differential Equations	⋆ Differential Calculus, 2 sections

- *UMM*
  - S11 ⋆ Multivariable Calculus ⋆∗ Integral Calculus ⋆∗ Differential Calculus
  - F10 · Real Analysis ⋆∗ Differential Calculus
- *UMass: Qualifying Exam Review Instructor*
  - Su06 · Real Analysis · Geometry
- *UMass: Recitation Instructor and Grader*
  - S06 and F07 · Ordinary Differential Equations
- *UMass: Grader*
  - S04 · Complex Analysis · Real Analysis
  - F03 · Abstract Algebra II
- *UMass: Section Lecturer († WebAssign homeworks, ⋆ WebWork homeworks)*
  - S10 ∗ Linear Algebra, 2 sections
  - F09 ∗ Multivariate Calculus for Sci/Eng, 2 sections
  - S09 † Integral Calculus for Sci/Eng, 2 sections
  - F08 † Differential Calculus for Sci/Eng, 2 sections
  - S08 · Honors Integral Calculus
  - S07 · Multivariate Calculus for Sci/Eng
  - F06 † Integral Calculus for Sci/Eng
  - Su06 · Integral Calculus
  - F05 · Basic Math Skills for the Modern World
  - S05 · Differential Calculus for Sci/Eng
  - F04 · Basic Math Skills for the Modern World
  - F03 · Precalculus Trigonometry

PROFESSIONAL SERVICE

- 2018-now · Reviewer for Chaos: An Interdisciplinary Journal of Nonlinear Science (~1 per year)
- 2017-now · Reviewer for Bulletin of the London Mathematical Society (~1 per year)
- 2016-now · Reviewer for Physics Letters A (~1 per year)
- 2012-now · Reviewer for Communications in Nonlinear Science and Numerical Simulation (~1 per year)
- 2010-now · Reviewer for Mathematical Reviews/MathSciNet (~1-2 per year)
- Jun 2011 · Session Chair, LT9: Lie Theory and its App. to Phys., Varna, Bulgaria

ON CAMPUS SERVICE

- *SUNY Old Westbury*

  CAMPUS-WIDE
  - F16-S18 · Faculty Senate Secretary & Treasurer
  - F16-S18 · Faculty Judicial Committee
  - S17 · Committee for Shuttle Improvements: Chair
  - recurring · Academic Standing Committee: Jun 2016, Jan 2016, Aug 2016, Jan 2017, Jun 2017, Aug 2017

  DEPARTMENTAL
  - F17-now · Content Coordinator for Smart Scholars Program
  - S16-now · CSTEP Coordinator for Math/CIS Dept.
  - F16-now · Math & CIS Faculty Senate Senator
  - S16-now · Academic Advising
  - Sum 2018 · Search Committee (Asst. Dir. MLC)
  - F17 · OW Representative at Delegate Assembly for the Metro NY Section of the MAA
  - S17 · Helped to draft Math Learning Center improvements recommendations
  - recurring · Open House representative for Mathematics: Apr 2016, Nov 2016
  - Mar 2016 · Presentation: *Careers/Pathways for Math Majors*, sponsored by CSTEP
    See website: www.jdambroise.com/mathcareers

- *Amherst College*
  - Fall 2013 · Putnam Problems Practice Sessions
  - Fall 2013 · Graduate School Info Session
- *Bard College*
  - Aug 2011 · Graduate School Panel at Undergrad Workshop
- *UMM*
  - F10-S11 · Calculus Tutoring Center Math Liason
- *UMass*
  - F08-S10 · Calculus Tutoring Center, organizing and scheduling
  - F08-S10 · Mathematical Physics Seminar Organizer
  - F08, F09 · Distinguished Teaching Award Selection Committee
  - Jan 2008 · Volunteer renovation of Mathematics undergraduate lounge
  - S07, S08 · Workshop at Campus TA Orientation: *Making the Most of Your TA Experience Workshop*
  - Sep 2008 · Student welcome and discussion, Mathematics and Statistics TA Orientation
  - May 2008 · Dinner and discussion, Women and Minorities in Physics mentoring event

PROFESSIONAL ORGANIZATIONS

- SIAM: Society for Industrial and Applied Mathematics
- AWM: Association for Women in Mathematics
- AMS: American Mathematical Society

SEMINARS & WORKSHOPS

- F13-S15 · Nonlinear Waves Seminar, Umass Amherst
- Jun 2009 · Summer School on Nuclear and Particle Astrophysics: *Connecting Quarks with the Cosmos*, Univ Washington, Seattle WA
- Jun 2009 · Graduate Summer School: *Geometry of Quantum Fields and Strings*, UPenn
- Jun 2008 · MSRI Workshop: *A Window Into Zeta and Modular Physics*, UC Berkeley
- Jul 2009 · Career Mentoring for Women in Mathematics, Wheaton College, Norton, MA
- F08 - S10 · Organizer of Mathematical Physics Seminar
- F07 - S08 · Mathematical Physics and General Relativity Seminar
- F06 - S07 · General Relativity and Cosmology Seminar
- S06 - S10 · Physics Departmental Colloquium

TALKS

- *2D solutions of the hyperbolic discrete nonlinear Schrödinger equation*
  - Aug 2018 · Internat. Conf. on Nonlin. Phenomena in Bose Condensates & Optical Syst., Tashkent, Uzbekistan
- *Roads and Wheels and Ellipses*
  - Apr 2018 · The Math Talks (for undergraduate students), SUNY Old Westbury
- *Lightning Talk: Prep Videos for Math Courses*
  - Apr 2018 · The Future of Higher Ed. – TLRC Spring 2018 Mini-Conference, SUNY Old Westbury
- *Wave Propagation in $\mathcal{PT}$-Symmetric Systems*
  - Apr 2017 · Applied Math Seminar, Univ. of Vermont at Burlington
- *Multidimensional discrete compactons in nonlinear Schrödinger lattices*
  - Jun 2016 · 4rd Internat. Conf. of Nonlinear Waves – Theory and Applications, Tsinghua Univ., Beijing, China
  - May 2016 · Nonlinear Waves Seminar, Umass Amherst
- *Eigenstates of chains with embedded defects*
  - Apr 2014 · Nonlinear Waves Seminar, Umass Amherst
  - Apr 2014 · Analysis and PDE Seminar, Worcester Polytechnic Institute, Worcester, MA
  - Jun 2013 · 3rd International Conference of Nonlinear Waves – Theory and Applications, Beijing, China

- *Parametric and other exact solutions to Einstein's equations in terms of special functions*
  Sep 2012 · AMS Eastern Section Meeting, Special Session on Geometric Evolution Equations, RIT, NY
  Jul 2012 · AWM Workshop at SIAM Annual Meeting AWM Workshop, Minneapolis, MN
- *Parametric Solution of Certain Nonlinear Differential Equations in Cosmology*
  Jun 2011 · LT9: Lie Theory and its Applications to Physics, Varna, Bulgaria
  Jan 2011 · Joint Mathematics Meetings, New Orleans, LA
- *Elliptic functions in cosmology*
  Oct 2009 · AMS Fall Central Sectional Meeting, Baylor University, Waco, Texas
- *One correspondence used in reformulating Einstein equations for various scalar field cosmologies*
  Jun 2009 · LT8: Lie Theory and its Applications to Physics, Varna, Bulgaria
  Sep 2009 · Baylor University Mathematical Physics Seminar, Waco, Texas
  Sep 2009 · Texas A&M University Mathematical Physics Seminar, College Station, Texas
- *A linear Schrödinger formulation of d-dimensional Bianchi I cosmology and its relation to BECs*
  Aug 2008 · 5th International Conference of Math. and Computing, Plovdiv, Bulgaria
- *On Relating d-dimensional FRLW Cosmology to Bose-Einstein Condensates*,
  Jun 2008 · MSRI Workshop: A Window into Zeta and Modular Physics, UC Berkeley
- *A Schrödinger type formulation of some scalar field cosmologies*,
  Mathematical Physics and General Relativity Seminar, UMass Dept of Math & Stats, Nov 2007
- *A nonlinear Schrödinger type formulation of FLRW and Bianchi I&V scalar field cosmologies*
  Aug 2007 · 4th International Conference of Math. and Computing, Plovdiv, Bulgaria
- *A nonlinear Schrödinger type formulation of FLRW scalar field cosmology*,
  Geometric Relativity and Cosmology Seminar, UMass Dept of Math & Stats, Oct 2006

POSTERS

- *Multidimensional discrete compactons in nonlinear Schrödinger lattices*
  Sep 2015 · Conference on Waves, Spectral Theory & Applications, Princeton Univ.
- *Uncoupled EMP and linear Schrödinger models for a conformally Bianchi I scalar field cosmology*
  Jan 2009 · AWM Workshop for Women Graduate Students and Recent PhDs, Washington D.C.
- *A linear Schrödinger formulation of d-dimensional Bianchi I cosmology and its relation to Bose-Einstein Condensates*
  Sep 2008 · Conference on Non-linear Phenomena in Mathematical Physics, Toronto, Canada
- *A nonlinear Schrödinger type formulation of FLRW and Bianchi I scalar field cosmologies,*
  Jul 2007 · 18th International Conference on General Relativity and Gravitation, Sydney, Australia

CONFERENCES (△ presented)

- Aug 2018 △ Internat. Conf. on Nonlin. Phenomena in Bose Condensates & Optical Syst., Tashkent, Uzbekistan
- Apr 2018 △ The Future of Higher Ed. – TLRC Spring 2018 Mini-Conference, SUNY Old Westbury
- Oct 2017 · Conference on Waves, Spectral Theory & Applications Part 2, Chapel Hill, NC.
- Aug 2017 · Science Education for New Civic Engagements and Responsibilities (SENCER), Stony Brook, NY
- Mar 2017 · Conf. on Financial Math., Farmingdale State College, Farmingdale, NY
- Aug 2016 · SIAM Conf. on Nonlinear Waves and Coherent Structures, Philadelphia, PA
- Jul 2016 · SIAM Annual Meeting, Boston, MA
- Jun 2016 △ 4th Internat. Conf. of Nonlinear Waves – Theory and Applications, Tsinghua Univ., Beijing, China
- Sep 2015 △ Conference on Waves, Spectral Theory & Applications, Princeton, NJ.
- Jan 2015 · Joint Mathematics Meetings, San Antonio, TX
- Jun 2013 △ 3rd International Conference of Nonlinear Waves – Theory and Applications, Beijing, China
- Sep 2012 △ AMS Eastern Section Meeting, Special Session on Geometric Evolution Equations, Rochester, NY
- Jul 2012 △ AWM Workshop at SIAM Annual Meeting AWM Workshop, Minneapolis, MN
- Jun 2012 SIAM Conf. on Nonlinear Waves and Coherent Structures, Univ. of Wash., Seattle, WA

- Apr 2012 · Great Lakes Geometry Conference, Ohio State Univ, Columbus, OH
- Jan 2012 · Joint Mathematics Meetings, Boston, MA
- Jun 2011 △ LT9: Lie Theory and its Applications to Physics, Varna, Bulgaria
- May 2011 · Conference on Connections in Geometry and Physics: GAP, Fields Institute, Toronto, ON
- Jan 2011 △ Joint Mathematics Meetings, New Orleans
- Oct 2010 · Yamabe Memorial Symposium: Geom. and Low-Dim'l Topology5^{th} Biennial, UMN Twin Cities
- Sept 2010 · Symmetry, Separation, Super-integrability and Special Functions (S4) Conf., UMN Twin Cities
- Jan 2010 · Joint Mathematics Meetings, San Francisco
- Oct 2009 △ Represent. Thy. and Math. Phys. Conf. in honor of Gregg Zuckerman's 60^{th} birthday, Yale Univ., CT
- Oct 2009 · AMS Fall Central Sectional Meeting, Baylor Univ., Waco, TX
- Jun 2009 △ LT8: Lie Theory and its Applications to Physics, Varna, Bulgaria
- Apr 2009 · AMS Spring Eastern Sectional Meeting, Worcester Polytechnic Institute, Worcestor MA
- Jan 2009 · Joint Mathematics Meetings, Washington D.C.
- Jan 2009 · AWM Workshop for Women Graduate Students and Recent PhDs, JMM, Wash. D.C.
- Sep 2008 △ Conference on Non-linear Phenomena in Mathematical Physics, Fields Institute, Toronto, Canada
- Aug 2008 △ 5th International Conference of Math. and Computing, Tech. Univ. of Plovdiv, Bulgaria
- Jun 2008 · Motives, Quantum Field Theory and Pseudodifferential Operators, Boston Univ.
- Jun 2008 △ MSRI Workshop, *A Window Into Zeta and Modular Physics*, UC Berkeley
- Oct 2007 · AMS Fall Eastern Section Meeting, Rutgers, New Jersey
- Aug 2007 △ 4th International Conference of Math. and Computing, Tech. Univ. of Plovdiv, Bulgaria
- v • Jul 2007 · 18th Intern. Conf. on General Relativity and Gravitation, Sydney, Australia
- Jul 2007 △ 7th Eduardo Amaldi Conf. on Gravitational Waves, Australia
- Jan 2007 · Rethinking Gravity, University of Arizona
- Oct 2006 · AMS Fall Eastern Section Meeting, University of Connecticut