

# GRACIE CONTE | Résumé

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## EDUCATION

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**University of North Carolina, Chapel Hill** (expected) May 2022  
Ph.D. Applied Mathematics

**California State University, Sacramento** May 2014  
B.A. Mathematics and B.A. Physics  
Certificate: Scientific Computing and Simulation

## EMPLOYMENT HISTORY

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**Graduate Research Assistant & Graduate Teaching Fellow** Aug. 2016 - Present  
UNC, Chapel Hill

- Performed research in numerical partial differential equations involving development of a quantum graph software package in MATLAB
- Presented 9 mathematics lectures at 6 different conferences and seminars on topics of numerical analysis, quantum mechanics, spectral analysis, and bifurcation theory
- Attended two mini-schools focusing on quantum mechanics and the many-body problem
- Taught 10 classes with full course responsibility and led 5 recitation sections
- **Awards:** 2019-2020 Senior Teaching Fellowship, 2019 J. Burton Linker Award for Excellence in Undergraduate Teaching, 2016-2017 Initiative for Minority Excellence

## RESEARCH EXPERIENCE AND SKILLS

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### Projects:

Ph.D Dissertation Fall 2018 - Present  
*Title:* Searching for Time-Periodic Solutions to the Nonlinear Schrödinger Equation  
*Adviser:* Dr. Jeremy Marzuola

Displacement Analysis of Neo-Hookean Elastic Materials Spring 2018  
Wave Breaking Solutions to the Whitham Equation Fall 2017  
Flow Enhanced Diffusion in a Circular Pipe Fall 2017  
Stark Effect Energy Shift for the Hydrogen Atom Spring 2017  
Heterojunction-Assisted Impact Ionization Summer 2011

### Skills:

*Fields:* numerical analysis, mathematical modeling, spectral analysis, Fourier analysis, dynamical systems, quantum mechanics, computational fluid dynamics, perturbation theory, multiscale methods  
*Programming Languages:* MATLAB, Python, Mathematica, FreeFem++, Fortran, C++  
*Other Technical Skills:* L<sup>A</sup>T<sub>E</sub>X, GitHub, Labview

## PUBLICATIONS

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Thomas Beck, Isabel Bors, [Grace Conte](#), Graham Cox, Jeremy L. Marzuola, *Limiting eigenfunctions of Sturm–Liouville operators subject to a spectral flow*, Annales mathématiques du Québec (2020)

[Grace Conte](#), Roy Goodman, Jeremy Marzuola, *QGLAB: a MATLAB package for computations on quantum graphs*, (preprint)

## LEADERSHIP EXPERIENCE

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Co-Director: Girls Talk Math August 2018 - Present  
Founding Committee Member: Directed Reading Program - UNC Chapter August 2018 - Present  
President: American Mathematical Society - UNC Chapter August 2019 - May 2020  
President: Graduate Mathematics Association - UNC August 2019 - May 2020  
Treasurer (Founding Officer): SIAM - UNC Chapter August 2017 - May 2019  
Exhibit Leader: UNC Science Exposition April 2017 - April 2019  
Council Member: Graduate Student Advisory Council - CSUS August 2015 - May 2016