Dominic F. Veconi
Curriculum Vitae

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Department of Mathematics
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EDUCATION: **Penn State University**, University Park, PA
Candidate for Doctor of Philosophy, Fifth Year
Department: Mathematics
Cumulative GPA: 3.92
Advisor: Yakov Pesin (pesin@math.psu.edu)

Hamilton College, Clinton, NY
Bachelor of Arts degree (with honors), Magna Cum Laude, May 2015
Major: Mathematics Minor: Biology
Cumulative GPA: 3.84 Mathematics GPA: 3.95

INTERESTS: I am interested in dynamical systems generally. My particular research interests include smooth ergodic theory, partial and non-uniform hyperbolicity, dynamics on smooth manifolds and Lie groups, and thermodynamics of topological Markov shifts and symbolic dynamical systems.

RESEARCH PAPERS:

- D. Veconi. *Thermodynamics of pseudo-Anosov diffeomorphisms.* Preprint.
  - Existence and uniqueness of equilibrium states with respect to a family of geometric *t*-potential functions, as well as statistical properties of these measures, for a class of nonuniformly hyperbolic surface diffeomorphisms.
- D. Veconi. *Equilibrium states of almost Anosov diffeomorphisms.* Discrete and Continuous Dynamical Systems, 40, No 2 (2020)
  - Existence and uniqueness of equilibrium measures with respect to a family of geometric *t*-potential functions, as well as statistical properties of these measures, for a collection of nonuniformly hyperbolic toral diffeomorphisms.
- K. Arehndt, L. DeWolf, L. Mazurowski, K. Mitchell, T. Rolling, D. Veconi. *Initial and boundary value problems for the Caputo fractional self-adjoint difference equations*. Enlightenment of Pure and Applied Mathematics, 2, No 1 (2016)
  - Solutions to initial and boundary value problems for difference equations of Caputo fractional order. Work was part of 2014 REU at the University of Nebraska – Lincoln under Dr. Allen Peterson.

TEACHING EXPERIENCE:

Penn State University:

- Math 111 *Techniques of Calculus II*, Spring 2020
  - Multivariable functions; partial differentiation; multiple integrals; first-order linear and separable differential equations; applications.
- Math 220 *Matrices*, Fall 2019
  - Matrix algebra; linear transformations; subspaces; orthogonality; diagonalizability; characteristic polynomials; applications.
- Math 231 *Calculus of Several Variables*, Spring 2019; Summer 2019*
  - Three-dimensional analytic geometry; calculus of parametric curves; partial differentiation; applications.
- Math 230 *Calculus and Vector Analysis*, Fall 2018, 2017; Summer 2018*, 2019*; Spring 2018

* Online course through Penn State World Campus.

    - Calculus of parametric curves, multivariable functions, and vector fields; multiple integrals; line and surface integrals; Green's theorem, Stokes' theorem, and the divergence theorem; applications.
- Math 251 *Ordinary and Partial Differential Equations*, Spring 2017, Fall 2016
    - First- and second-order equations; higher-order linear equations; Laplace transforms; systems of equations; Fourier series; partial differential equations.
- Math 110 *Techniques of Calculus I*, Summer 2016
    - Functions; graphs, techniques of differentiation and integration; improper integrals; applications.
- Math 021 *College Algebra I*, Spring 2016
    - Linear equations and inequalities; quadratic expressions; algebraic fractions; negative and rational exponents; radicals.

Other Educational Experience:

- **Private Tutoring**, Fall 2018 – present
    - Private mathematics tutor for undergraduate courses at Penn State.
- **Penn State University Department of Mathematics**, *Math 141 Teaching Assistant*, Summer 2017
    - Facilitated online discussion board and recitation sessions for online course in calculus II
- **Penn State University Department of Mathematics**, *Math 022 Teaching Assistant*, Fall 2015
    - Led online recitation sessions and graded assignments for online course in college algebra II
- **Hamilton College Department of Mathematics**, *Math 337 Grader*, Spring 2015
    - Graded problem sets for upper-level undergraduate course in partial differential equations
- **Hamilton College Quantitative and Symbolic Reasoning Center**, *Peer Tutor*, Fall 2012 – Spring 2015
    - Tutored eight to twelve drop-in students a week in calculus, linear algebra, differential equations, general and organic chemistry, and biology
- **Hamilton College Peer Tutoring Project**, *Peer Tutor*, Fall 2013 – 2014
    - Tutored students one-on-one in calculus, linear algebra, and organic chemistry

TALKS FOR CONFERENCES, SEMINARS AND COLLOQUIA:

- Presentation: Thermodynamics of pseudo-Anosov diffeomorphisms. ICTP Mathematics Seminar (6/30/2020)
- Presentation: Equilibrium states of almost Anosov diffeomorphisms. IMPAN 2020 Vision for Dynamical Systems Conference (8/15/2019)
- Presentation: Equilibrium states of almost Anosov diffeomorphisms. University of Maryland Workshop on Dynamical Systems and Related Topics (4/12/2019)
- Presentation: SRB Measures of almost Anosov diffeomorphisms. Penn State University Department of Mathematics Working Seminar: Dynamics and its Working Tools (8/28/2018)
- Presentation: Bias in student evaluations of teaching. Penn State University Department of Mathematics Diversity Seminar (10/31/2017)
- Poster: Initial and boundary value problems for the Caputo fractional self-adjoint difference equations. Annual AMS/MAA Joint Math Meetings Undergraduate Poster Session (1/12/2015)
- Presentation: Initial and boundary value problems for the Caputo fractional self-adjoint difference equations. Hamilton College Department of Mathematics Colloquium (9/19/2014)

SERVICE AND OUTREACH:

- Penn State Mathematics Department: Graduate Student Association co-founder (Spring 2020)
- Penn State Mathematics Department: Student-Directed Colloquium co-organizer (Fall 2018-present)
- Penn State Mathematics Department: First-year graduate peer mentor (Fall 2018 – present)
- Penn State Mathematics Department: First-year graduate peer mentoring program co-founder (Fall 2018)
- Penn State Mathematics Department: Graduate student open house organizer, presenter, panelist (Spring 2018 – 2019)
- Penn State Mathematics Department: Diversity Seminar presenter (Fall 2017)
- Penn State University Eberly College of Science : Climate and diversity committee (Fall 2017 – present)
- Penn State Mathematics Department: Climate and diversity committee (Fall 2017 – present)
- Penn State Mathematics Department: Climate and diversity workshop organizer (Fall 2017)
- Penn State Mathematics Department: Climate and diversity workshop committee (Fall 2016)

PROFESSIONAL MEMBERSHIPS:

American Mathematical Society
Mathematics Association of America

GRANTS, FELLOWSHIPS AND HONORS:

- Teaching:
  - Graduate Teaching Associateship, *Penn State Mathematics Department* (April 2018)
  - Charles M. Hoover Memorial Graduate Teaching Award, *Penn State Mathematics Department* (April 2018)
  - Departmental Graduate Teaching Award, *Penn State Mathematics Department* (April 2017)
- Service:
  - ZZRQ Departmental Service Award, *Penn State Mathematics Department* (April 2018)
  - Dean's Climate and Diversity Award (nominee), *Penn State University Eberly College of Science* (January 2018)
- Academic:
  - Jack and Eleanor Pettit Scholarship in Science, *Penn State University* (September 2016, September 2017, September 2018)
  - Vollmer-Kleckner Scholarship in Science, *Pennsylvania State University* (September 2015, September 2019)
  - ΦBK Member, *Hamilton College* (May 2015)
  - Elihu Root Fellowship for graduate studies, *Hamilton College* (May 2015)
  - Tompkins Prize in Mathematics, *Hamilton College* (May 2015)
  - Edward Huntington Memorial Mathematical Prize Scholarship, *Hamilton College* (August 2014)

TECHNOLOGY: Scientific Software: LaTeX, Maple, Mathematica, MATLAB, Minitab, Microsoft Excel
Programming Languages: C++, Python