NICOLÁS ZALDUENDO VIDAL

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HIGHER EDUCATION

PhD in Applied Mathematics, *Oct 2020 - Dec 2023*
Université de Lorraine and Inria Grand Est, Nancy, France.
Subject: The multi-type bisexual Galton-Watson branching process.
Supervisors: C. Fritsch and D. Villemonais.
My manuscript is here.

Master M2 "Mathématiques de l'Aléatoire", *Sept 2019 - Sept 2020*
Université Paris-Saclay, Orsay, France.
Internship supervisors: C. Fritsch, D. Villemonais (France) and E. Horton (England).
My manuscript is here.

Master of Engineering Sciences in Applied Mathematics, *March 2018 - Jan 2019*
Universidad de Chile, Santiago, Chile.
Supervisor: D. Remenik.
Graduated with highest honours. My manuscript in Spanish is here.

Mathematical Engineering, *March 2012 - Dec 2017*
Universidad de Chile, Santiago, Chile.
Graduated with highest honours.

ACADEMIC EMPLOYMENT

Assistant Professor. *Universidad de Santiago.* *Dec 2025 - Today*

Postdoctoral Position. *Centro de Modelamiento Matemático.* *Jul 2025 - Dec 2025*
Description: Asymptotic analysis of models in population dynamics.
Supervisors: Avelio Sepúlveda and Daniel Remenik.

Postdoctoral Position. *UMR Mistea, Inrae Occitanie-Montpellier.* *Jan 2024 - Jun 2025*
Description: Limit theorems for infinite dimensional branching processes.
Supervisor: Bertrand Cloez.

PUBLICATIONS AND WORKS IN PROGRESS

Journal Publications:

[3] Quasi-limiting behaviour of the sub-critical bisexual Galton-Watson branching process.
C. Fritsch, D. Villemonais and N. Zalduendo (to appear in Bernoulli). Arxiv. Journal.

[2] The Multi-type bisexual Galton-Watson branching process.
C. Fritsch, D. Villemonais and N. Zalduendo (in Ann. Inst. H. Poincaré Probab. Statist. 60(4)). Arxiv. Journal.

[1] Restricted maximum of non-intersecting Brownian bridges.
Y. Yalanda and N. Zalduendo (in ESAIM: PS 28 (2024) 258273). Arxiv. Journal.

Preprints:

[3] Convergence of weighted branching processes.
D. Villemonais and N. Zalduendo PDF.

[2] On ecological models with sublinear growth.
N. Champagnat, P. Marquet, C. Quiñinao, R. Rebolledo, M. Tejo, L. Videla and N. Zalduendo (in

review at Theoretical Population Biology). PDF.

[1] Central limit theorems for branching processes under mild assumptions on the mean semigroup.
B. Cloez and N. Zalduendo (in review at Annals of Probability). PDF.

CONFERENCES ORGANIZATION

Conference on Non-Local Branching Processes. CIRM Luminy, France. *Sept 2024.*
Organization of a conference for 70 participants.

21st INFORMS Applied Probability Society Conference. Nancy, France. *June 2023.*
Organization of a conference for 450 participants.

SUPERVISIONS

Project 3A (M2) École des Mines de Nancy. Hassan Berrada. *Sept 2022 - Feb 2023*
Subject: Study and simulation of a continuous time bisexual birth and death process. Co-supervised with C. Fritsch.

TEACHING EXPERIENCE

Some of the material that I have produced over the years can be found here

Universidad de Chile:
Lecturer (45 hrs.), Introduction to Algebra. *Aug - Dec 2025*
École des Mines de Nancy: as *Chargé de TD (20 hrs each)* in the courses:
-Probabilités I. *Sept - Dec 2023*
-Probabilités I. *Sept - Dec 2022*
-Analyse Numérique. *Sept - Dec 2022*
-Probabilités I. *Sept - Dec 2021*
-Analyse Numérique. *Sept - Dec 2021*
-Probabilités II. *Sept - Dec 2020*
Universidad de Chile: (this course was taught online)
Lecturer (45 hrs), Introduction to Algebra. *March - June 2021*
Universidad de O'higgins
Lecturer (45h), Mathematics for Public Administration. *March - June 2019*
Universidad Técnica Federico Santa María
Lecturer (45 hrs), Stastistics. *March - June 2019*
Universidad de Chile: Summer School for High School students.
Lecturer (40 hrs), Basics of Linear Algebra. *January 2019*
Universidad Andrés Bello
Lecturer (45 hrs), Probabilities and Statistics. *June - Dec 2018*
Universidad Santo Tomás
Assistant Professor (20 hrs), Linear Algebra. *March 2017 - June 2017*
Universidad de Chile: as *Assist. Professor (30 hrs each)* in the courses: *March 2014 - June 2019*
-Stochastic Calculus *(2 times).*
-Abstract Algebra *(1 time).*
-Markov Processes *(2 times).*
-Probabilities *(2 times).*
-Probabilities and Statistics *(3 times).*
-Linear Algebra *(9 times).*
-Advanced Calculus and Applications *(1 time).*
-Introduction to Algebra *(2 times).*
-Multivariable Calculus *(1 time).*

-Differential and Integrable Calculus *(2 times)*.
-Introduction to Calculus *(1 time)*.

TALKS

Besançon Meeting on Probability, Ecology & Evolution. *Dec 2024*
Invited Speaker. Besançon, France.
Discrete Randomness Conference. *Dec 2023*
Invited Speaker. Créteil, France.
Workshop L^2 in Probability and Statistics. *Sept 2023*
Invited Speaker. Metz, France.
21st INFORMS Applied Probability Society Conference. *June 2023*
Nancy, France.
Mathematical Models in Ecology and Evolution. *July 2022*
Reading University, England.
Journées de Probabilitiés. *June 2022*
Orbey, France.
Etheridge Group Seminar. *July 2021*
Oxford University, England.
École de Recherche de la Chaire MMB. *June 2021*
Aussois, France.

DISTINCTIONS

Master Scholarship. *Sophie Germain Excellence Student Scholarship.* *Sept 2019 - Aug 2020*
Fondation Mahtématique Jacques Hadamard, Paris, France.
Graduated with the highest honours. *Jan 2019*
Master of Engineering Sciences in Applied Mathematics.
Graduated with the highest honours. *Jan 2019*
Mathematical Engineering.
Outstanding Student Award. *Dec 2017*
Faculty of Physical and Mathematical Sciences. Santiago, Chile.
Outstanding Student Award. *Dec 2012*
Faculty of Physical and Mathematical Sciences. Santiago, Chile.

EXTRACURRICULAR ACTIVITIES

Member of the Unit Council, MISTEA, INRAE Montpellier. *Oct 2024 - Today*
Charge: Postodoctoral Representative.

Member of the faculty council. *Dec 2017 - Dec 2018*
Charge: Undergraduate Representative.

Member of the faculty students centre directive board. *March - Dec 2017*
Charge: Teaching Representative.

Member of the mathematical engineering students centre. *March 2016 - March 2017*
Charge: Teaching Representative.

SOFTWARE SKILLS

Python.
MatLab.
R.
LaTeX.

LANGUAGE SKILLS

English. *Advanced*
French. *Advanced*
Spanish. *Native*