Mei Rose Connor

Wir müssen wissen, wir werden wissen. —David Hilbert

Education

2018–2022	**B.Sc.**, *Stony Brook University*, Stony Brook, NY, *3.67/4.00* Mathematics and Linguistics majors

Research Interests

Mathematics

- Group structure of algebraic varieties
- Discrete Mathematics
- Many–valued logic, particularly seven–valued modal logic

Work Experience

Spring 2022 — **Department Intern**, *Dept. of Linguistics, Stony Brook University*, Stony Brook, New York

- Read all lecture notes for Mathematical Methods for Linguistics, including new ones
- Provided detailed feedback on the lecture notes; the feedback should discuss content as well as presentation
- Wrote up detailed solutions (including discussion of incorrect solutions) for hand-crafted exercises in the lecture notes
- Tested a procedural generator for exercises with solutions

Summer 2021 — **Academic Affiliate**, *Institute for Computational and Experimental Research Mathematics (ICERM), Brown University*, Providence, Rhode Island

- Conducted research at ICERM offices for 8 weeks on periodic trajectories of polygonal billiards dynamics
- Worked with undergraduates, TAs, and faculty mentors to prove results making connections between existing theorems and approaches
- Used SageMath (a package for Python) to test hypotheses and run simulations

Spring 2021 — **Lecturer's Assistant**, *Dept. of Mathematics, Stony Brook University*, Stony Brook, New York

- Responded promptly to students' questions in virtual calculus class
- Participated in classroom management

Winter 2020 — **Undergraduate Teaching Assistant**, *Dept. of Philosophy, Stony Brook University*, Stony Brook, New York

2019–2022 **Student Software Coder**, *Teaching and Learning Lab, Center for Excellence in Learning and Teaching*, Stony Brook, New York

- Collaborated with faculty of Biology, Biomedical Engineering, and Philosophy to produce unique and specialized educational software
- Designed and implemented interactive theorem prover to improve upon existing programs (Logic 2010, Logic 2000) to teach Łukasieviczian propositional logic
- Improved upon the Virtual Reality game *Tarski's Truth Machine*, making it accessible from desktop and a wide range of VR devices
- Integrated the skills (graphics, video editing) of other members of the lab to improve user interfaces of software tools

2017–2018 **Lead Conference Organizer**, *Sonya Kovalevskaya Day of Math for Girls*, Ambler, Pennsylvania

Conferences with Participation

Winter 2022 **Mei Rose Connor, P. Michael Kielstra, Zachary Steinberg, Chenyang Sun**, *Hyperbolic Staircases: Periodic Paths on $2g + 1$–gons*, Joint Mathematics Meetings, Seattle, Washington

- Will be presenting poster on work done at ICERM with 3 undergraduate collaborators

Spring 2020 **Mei Rose Connor**, *JainaSyadLogic*, Gathering 4 Gardner 14, Atlanta, Georgia: Cancelled due to COVID

- Invited to give a 6–minute lecture on work in seven–valued logic
- Prepared a unique giveaway for all conference participants related to work in logic and teaching logic

Fall 2019 **Mei Rose Connor**, *Opening Statement*, Heidelberg Laureate Forum, Heidelberg, Germany

- Produced a 1-minute long Opening Statement shown to all participants and laureates at Opening Ceremonies
- Engaged daily with mathematics and computer science laureates as well as young researchers from around the world
- Attended professional development Q&A led by Fields medallist Efim Zelmanov

Extracurricular Activities

Spring 2021– **President of Stony Brook University Math Club**, *Stony Brook University*, Stony
Spring 2022 Brook, New York

- Planned and organized events ranging from faculty and student lectures to statistics–themed craft night
- Held meeting of executive board every week during which previous week's and future events are discussed
- Designed posters and mailings sent to a 400+ person mailing list to raise awareness and attendance at events

Spring 2021	**Math With Words: An Introduction to Formal Semantics**, *Stony Brook University Math Club*, Virtual
	○ Introduced the idea of analyzing the meaning of sentences based on the meaning of constituent parts (compositionality)
	○ Stepped through the process of deriving truth conditions for a sentence from lexical, phrasal, and substitution rules applied to it
	○ Part of a series of Quarantined Undergraduate End–of–Semester Talks (QUEST) with various speakers (Spring Semester series)
	○ Presented in under 20 minutes, as is the constraint for QUEST
Winter 2020	**Bombelli and the History of Complex Numbers**, *Stony Brook University Math Club*, Virtual
	○ Discussed the history of complex numbers, building from the ideas of Diophantos and Mahavira to the problem of the solutions of cubics in the XVI century
	○ Part of QUEST (Fall Semester series) and presented in under 20 minutes
Spring 2020	**From True and False to JSL: An Adventure in Logic**, *Stony Brook University Math Club*, Virtual
	○ Introduced the ideas of the propositional logic connectives, their syntax, and their semantics in terms of truth tables
	○ Discussed modal logic operators, $\square$ and $\lozenge$ as well as modal axioms
	○ Showed history, motivation, and syntax of JainaSyadLogic, the presenter's own 7–valued modal logic system
Winter 2019	**Joint Mathematics Meetings**, Baltimore, Maryland

▬▬▬ Languages

English	Native	
Latin	Intermediate	*Achieved a perfect score on the National Latin Exams 2014*
German	Novice	

▬▬▬ Computer skills

Proficient	LATEX 2_ε, Desmos Graphing Calculator, LEGO Mindstorms EV3, JavaScript/jQuery, HTML/CSS, Python 3
Familiar with	Maple, Sage/CoCalc, Mathematica

▬▬▬ Publications

Papers

[1] Mei Rose Connor, Diana Davis, Paige Helms, Samuel Lelièvre, Michael Kielstra, Zachary Steinberg, and Chenyang Sun. Hyperbolic staircases: Periodic paths on $2g + 1$–gons. https://arxiv.org/abs/2111.13971, 2021.