Wietse Vaes

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Education

Ph.D. Candidate in Applied Mathematics   **September 2023 - June 2028 (Expected)**
University of Washington, Seattle, USA
Advisor: Tom Trogdon & Heather Wilber

M.S. in Applied & Computational Mathematics   **September 2022 - December 2023**
University of Washington, Seattle, USA

B.S. in Mathematics, computational mathematics   **September 2019 - June 2022**
Universiteit Hasselt, Diepenbeek, Belgium

Erasmus   **January 2022 -June 2022**
Université de Montpellier, Montpellier, France

Fellowships and Awards

Provost Recruitment Funds fellowship   **Spring 2024**
University of Washington

Belgian American Education Foundation fellowship   **September 2022- June 2024**
BAEF inc.

Erasmus scholarship   **January 2022 - June 2022**
Universiteit Hasselt

Honorary student   **June 2022**
Universiteit Hasselt

Employment

Teaching Assistant   **Fall 2022 - Present**
University of Washington, Department of Mathematics
MATH 124: Host office hours, quiz & worksheet sections and grade for 60 students
AMATH 353: Host office hours and grade for 70 students

Grader   **Winter & Spring 2023**
University of Washington, Department of Applied Mathematics
AMATH 301: Host lab hours & review session and grade for 200 students
AMATH 353: Grade homework for 60 students

Mathematical Problem Liaison   **February 2021 - March 2023**
Universiteit Hasselt & University of Johannesburg
Organize a project involving teaching 40 students of UJ to model applied mathematical problems and aid them in their projects.

Calculus Teacher   **September 2020 - 2023**
Universiteit Hasselt
Instruct one week mathematics courses each September for 30 incoming STEM students each

Skills

Programming: MATLAB, Julia, LaTeX, Mathematica, Python, C++, R

Languages: Dutch - Native speaker, English - Excellent proficiency, French - Conversant

Research Experience

M.S. Thesis: Conservative discontinuous Galerkin methods for the kinetic Fokker-Planck equation
Advisor: Jingwei Hu, UW Department of Applied Mathematics   **January 2023 - December 2023**
- Apply local and recovery Discontinuous Galerkin methods to the one dimensional kinetic Fokker-Planck equation to numerically conserve mass, momentum and energy.

B.S. Thesis: Finite element analysis of a coupled Darcy-convection-diffusion system
Advisor: Sorin Pop & Fred Vermolen, Universiteit Hasselt, Department of Mathematics   **September 2022 - May 2022**
- Approximate a coupled non-linear partial differential equation through decoupling and an iterative scheme.
- Rigorously prove convergence of the iterative scheme along with existence and uniqueness of the solution.

Research Presentations

"Conservative discontinuous Galerkin methods for the kinetic Fokker-Planck equation"   **December 2023**
Universiteit Hasselt, Department of Mathematics
50-minute oral presentation

"Conservative discontinuous Galerkin methods for the kinetic Fokker-Planck equation"   **December 2023**
University of Washington, Department of Mathematics
50-minute oral presentation

"Finite element analysis of a coupled Darcy-convection-diffusion system"   **May 2022**
Universiteit Hasselt, Department of Mathematics
60-minute oral presentation

Campus and Community Service

WXML mentor   **September 2024 - present**
University of Washington, Department of Mathematics
- Mentor two undegraduate students on a research project in FEM

Departemental librarian   **December 2023 - present**
University of Washington, Department of Applied Mathematics
- Reorganize the entire library system

Event Coordinator and Community Builder   **September 2020 - June 2023**
Universiteit Hasselt, Department of Mathematics
- Organize events to boost moral in the entire department of Mathematics
- Facilitate communication between faculty and students

Program Ambassador   **March 2021 - March 2022**
Universiteit Hasselt, Department of Mathematics
- Inform incoming students on the Mathematics program and the university.

Tutor   **2019-2024**
Belgium & Seattle
- Tutor a multitude highschoolers and university students

Memberships

American Mathematical Society (AMS)   **March 2024 - Present**

Society of Industrial and Applied Mathematics (SIAM)   **April 2024 - Present**

International Linear Algebra Society (ILAS)   **January 2025 - Present**