

Hervé Nganguia

Department of Mathematics
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Current position

Assistant Professor, Department of Mathematics, Towson University
Jess and Mildred Fisher Endowed Professor of Mathematics, Towson University

Areas of specialisation

Fluid Dynamics; Mathematical Biology; Data Science

Appointments held

2018-2021 Assistant Professor, Indiana University of Pennsylvania
2021- Assistant Professor, Towson University
2022- Jess and Mildred Fisher Endowed Professor of Mathematics, Towson University

Education

2003 BSc in Engineering Sciences, City University of New York - College of Staten Island
2005 MSc in Biomedical Engineering, Columbia University
2008 MSc in Applied Mathematics, San Diego State University
2014 PhD in Mathematical Sciences, New Jersey Institute of Technology

Grants, Honors & Awards

2021-2022 "Mathematics Enhances Teamwork in STEM (METinSTEM)", *FCSM General Endowment Funds*, Towson University, **\$3,240.00**
2022-2024 "LEAPS-MPS: Mathematical Modeling of Targeted Drug Delivery: Unifying Lighthill and Taylor Theories", *LEAPS MPS-2211633*, National Science Foundation, **\$242,132.00**
2022-2025 Jess and Mildred Fisher Endowed Chair in the Mathematical and Computing Sciences, *Fisher College of Sciences and Mathematics*, Towson University, **\$24,000.00**

Publications & Talks (2019-)

PEER-REVIEWED JOURNAL ARTICLES

2019a K. Pietrzyk, **H. Nganguia**, C. Datt, L. Zhu, G. Elfring, and O. S. Pak, "Flow around a squirmer in a shear-thinning fluid", *Journal of Non-Newtonian Fluid Mechanics*, 268:101-110.

- 2019b **H. Nganguia**, O. S. Pak, and Y.-N. Young, "Effects of surfactant transport on electrodeformation of a viscous drop", *Physical Review E*, 99:063104.
- 2020a **H. Nganguia**, L. Zhu, D. Palaniappan, and O. S. Pak, "Squirmer in a viscous fluid enclosed by a Brinkman medium", *Physical Review E*, 101:063105.
- 2020b **H. Nganguia**, K. Zheng, Y. Chen, O. S. Pak, and L. Zhu, "A note on a swirling squirmer in a shear-thinning fluid", *Physics of Fluids*, 32:111906.
- 2021a K. Qin, Y. Chen, Z. Peng, **H. Nganguia**, L. Zhu, and O. S. Pak, "Propulsion of an elastic filament in a shear-thinning fluid", *Soft Matter*, 17:3829.
- 2021b **H. Nganguia**, W.-F. Hu, M.-C. Lai, and Y.-N. Young, "Effects of surfactant solubility on the hydrodynamics of a viscous drop in a DC electric field", *Physical Review Fluids*, 6:064004.

CONFERENCES

- 2019a "Electrohydrodynamics of Surfactant-Laden Drops", *American Physical Society March Meeting*.
- 2019b "Sorption-controlled electrohydrodynamics of a surfactant-covered viscous drop", *American Physical Society 72nd Annual Division of Fluid Dynamics Meeting*.
- 2020 "Effects of surfactant solubility on the hydrodynamics of a viscous drop in a dc electric field", *American Physical Society 73rd Annual Division of Fluid Dynamics Meeting*.
- 2021 "Swimming in a fluid pocket enclosed by a porous medium", *Society for Mathematical Biology*.

Teaching

TOWSON UNIVERSITY

- 2021-Present Calculus I; Elementary Linear Algebra; Experimental Mathematics; Linear Algebra; Mathematical Models; Special topics in Differential Equations and Optimization

INDIANA UNIVERSITY OF PENNSYLVANIA

- 2018-2021 Applied Math for Business; Calculus I/II for Business, Natural, and Social Science; Elementary Functions; Introduction to Linear Algebra; Modeling and Simulation; Numerical Methods; Ordinary Differential Equations

Mentoring

Graduate students: Ummul Aymen (Towson University, 2022-2023), James Della-Giustina (Towson University, 2022-2024), Omar Farooqui (Towson University, 2022-2023)

Undergraduate students: Kyle Pietrzyk (Santa Clara University, 2016-2018), Brandon Van Gogh (Santa Clara University, 2021-2022), Youssef Ben Bella (Towson University, 2022), William Hunter (Towson University, 2022), Ifenyinwa Okeke (Towson University, 2022)

Service to the profession

Reviewers - Journals: *Applied Sciences*, *Electronics*, *Energies*, *Journal of Biomechanics*, *Journal of Engineering Mathematics*, *Physics of Fluids*, *Scientific Reports*, *Soft Matter*.