

## CURRENT POSITION

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### Georgia Institute of Technology

Atlanta, GA, USA

Postdoctoral Fellow, Earth and Atmospheric Sciences, Advisor: Prof Annalisa Bracco

2023–Current

- Focus: “Interaction of ocean currents and seamounts”

## EDUCATION

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### University of New Hampshire (UNH)

Durham, NH, USA

Ph.D. in Applied Mathematics, Advisor: Prof John F Gibson

2018–2023

- Thesis: “Symmetries, Bifurcations and Transition to Turbulence”

### Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR)

Bengaluru, India

M.S. in Engineering Mechanics, Advisor: Prof M Alam

2015–2018

- Thesis: “Pattern Formation and Anomalous Modes in Axisymmetric Compressible Taylor-Couette Flow”

### Birla Institute of Technology and Science (BITS) Pilani

Pilani, India

B.E.(Hons.) in Mechanical Engineering

2011–2015

- Thesis: “Investigation of Turing Patterns Using Finite Element Method and Symmetry”

## PUBLICATIONS

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- [1] **P. Aghor** and J. F. Gibson, “Symmetry groups and invariant solutions of plane poiseuille flow”, *under review*, *arXiv preprint arXiv:2409.11517*, 2025.
- [2] **P. Aghor**, M. McKinley, and A. Bracco, “Interaction of ocean currents and seamounts: Role of bottom topography around Atlantis II”, *under review*, *ESS Open Archive DOI: 10.22541/essoar.173758245.52913306/v2*, 2025.
- [3] M. Atif, P. Dubey, **P. Aghor**, V. López-Marrero, T. Zhang, A. Sharfuddin, K. Yu, F. Yang, F. Ladeinde, Y. Liu, *et al.*, “Fourier neural operators for spatiotemporal dynamics in two-dimensional turbulence”, in *SC24-W: Workshops of the International Conference for High Performance Computing, Networking, Storage and Analysis*, IEEE, 2024, pp. 41–48.
- [4] **P. Aghor** and M. Atif, “Effect of outer cylinder rotation on the radially heated Taylor-Couette flow”, *Physics of Fluids*, vol. 35, no. 9, 2023.
- [5] **P. Aghor** and M. Alam, “Nonlinear axisymmetric Taylor-Couette flow in a dilute gas: Multiroll transition and the role of compressibility”, *Journal of Fluid Mechanics*, vol. 909, 2021.

## TEACHING

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- **Teaching Assistant** at UNH 2018 –2019, 2021–2022  
*Linearity (covers ODE’s, linear algebra, phase plane analysis), Multidimensional Calculus*
- **Teaching Assistant** at BITS Pilani 2015  
*Finite Element Method (ME G512)*

## SCHOLARSHIPS AND AWARDS

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- Department of Mathematics and Statistics Teaching Assistant Award, UNH 2022–2023
- Dissertation Year Fellowship, UNH Graduate School Award 2022–2023
- Departmental Nominee, Graduate School TA Teaching Award 2021–2022, 2022–2023
- R. Narasimha Award for the Best MS Thesis in Engineering Mechanics 2017–2018

## CONFERENCES, WORKSHOPS, SUMMER SCHOOLS

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**Rosshypalooza** Jul 2024  
University of Chicago Chicago, Illinois, USA

- Worked with Prof. William Boos (UC Berkley) on tropical stationary waves
- Worked with Prof. Da Yang and Prof. Dorian Abbot (UChicago) on a reduced model of extreme tropical precipitation

**Theoretical and Practical Perspectives in Geophysical Fluid Dynamics** May 2024  
ICTS Bengaluru, Karnataka, India

- Gave a talk on ‘Symmetries and Transition to Turbulence in Plane Poiseuille Flow’ [Video](#)

**Boulder Summer School - Hydrodynamics Across Scales** Jul 2022  
University of Colorado Boulder, Colorado, USA

- Poster presentation titled: ‘Invariant Subspaces of Channel Flow’

**APS-DFD Meeting** Nov 2021  
Phoenix Convention Center Phoenix, Arizona, USA

- Gave a talk on ‘Exploring Invariant Symmetry Subspaces of Channel Flow’

**School on Dynamics of Complex Systems** May-Jun 2016  
International Center for Theoretical Sciences (ICTS, Bangalore) Bengaluru, Karnataka, India

- Theme - Geophysical Fluid Dynamics

**CIMPA Summer School on Current Research in Finite Element Method** Jun-Jul 2015  
Indian Institute of Technology (IIT, Bombay) Mumbai, Maharashtra, India

- Conducted tutorial sessions on FreeFem++

**Finite Element Meet 2014** Dec 2014  
Tata Institute of Fundamental Research (TIFR-CAM) Bengaluru, Karnataka, India

- Gave a talk on ‘Numerical Continuation and Bifurcation in Presence of Symmetry in FreeFem++’

## EXTRACURRICULAR ACTIVITIES (SPORTS, WRITING AND OUTREACH)

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- BITS Pilani University Taekwondo Team 2014–2015  
*Gold Medal in BOSM 2015, Bronze Medal in BOSM 2014*
- Wrote a Ted-Ed Script - The greatest mathematician that never lived Jul 2020  
[Video](#), [Transcript](#)
- Wrote an article for *Loksatta*, a state-wide prominent Marathi language Newspaper about **Black Lives Matter Protests and Stripping the Pride off Columbus** Jun 2020  
[Link](#)

- Wrote an article for **Loksatta**, a state-wide prominent Marathi language Newspaper about the **SIR Model of Epidemiology** Apr 2020  
[Link](#)
- Volunteer at the **Student Mentoring Program at JNCASR** 2017, 2018  
*Taught 11<sup>th</sup> – 12<sup>th</sup> standard physics and mathematics to economically backward students.*

## REFERENCES:

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1. Prof. John F. Gibson (john.gibson@unh.edu)
2. Prof. Gregory P. Chini (greg.chini@unh.edu)
3. Prof. Annalisa Bracco (abracco@gatech.edu)
4. Teaching reference: Prof. Rita Hirschweiler (rita.hirschweiler@unh.edu)