

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

- [1] **P. Aghor** and J. F. Gibson, “Invariant symmetric subspaces of plane Poiseuille flow”, *under prep.*, vol. ??, 2024.
- [2] **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.
- [3] **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

- **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

- **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
- **Research Assistant** 2019–2021
- **R. Narasimha Award for the Best MS Thesis in Engineering Mechanics** 2017–2018

CONFERENCES, WORKSHOPS, SUMMER SCHOOLS

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| Dynamics days US 2023 | Jan 2023 |
| Online | |

- Poster presentation titled: ‘Codimension-two bifurcation in plane Couette flow’

Boulder Summer School - Hydrodynamics Across Scales

Jul 2022

University of Colorado

Boulder, Colorado, USA

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

Visiting Graduate-Student Researcher

Jun 2022

JNCASR

Bengaluru, Karnataka, India

- Gave a talk on ‘Symmetry, Dynamics and the Method of Slices’

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++’

RELEVANT COURSEWORK

Fluid Mechanics, Asymptotics and Perturbation Methods, Physical Oceanography, Geophysical Fluid Dynamics, Spatiotemporal and Turbulent Dynamics, Algebra I (Group and Ring Theory), Waves in Fluids, Nonlinear Vibrations, Electrodynamics, Theory of Relativity, Statistical Mechanics, Mathematical Physics, High Performance Computing, Numerical Linear Algebra, Numerical PDE's, Chaosbook Part 1 and 2.

TEST SCORES

- **All India Rank: 7 out of 3292 candidates** in GATE 2015, Engineering Sciences

SKILLS

- **Languages:** Python, Julia, MATLAB, C++, C, FORTRAN
- **Open Source Solvers:** FreeFem++, Dedalus, Channelflow, AUTO -07p, Tensorflow
- **Miscellaneous:** OpenMP, MPI, high performance computing, scientific computing, machine learning

EXTRACURRICULAR ACTIVITIES (SPORTS, WRITING AND OUTREACH)

- **BITS Pilani University Taekwondo Team** 2014–2015
Gold Medal in BOSM 2015, Bronze Medal in BOSM 2014
- Wrote a **Ted-Ed Script (at UNH) - 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 (at UNH)** Jun 2020
[Link](#)
- Wrote an article for **Loksatta**, a state-wide prominent Marathi language Newspaper about the **SIR Model of Epidemiology (at UNH)** Apr 2020
[Link](#)
- Volunteer at the **Student Mentoring Program at JNCASR** 2017, 2018
Taught 11th – 12th standard physics and mathematics to economically backward students.

REFERENCES:

1. Prof. John F. Gibson (john.gibson@unh.edu)
2. Prof. Gregory P. Chini (greg.chini@unh.edu)
3. Prof. Annalisa Bracco (annalisa@eas.gatech.edu)
4. Prof. Meheboob Alam (meheboob@jncasr.ac.in)