

Jewel Johnson

BS-MS Dual Degree in Biology

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SUMMARY

- BS-MS dual degree in Biology from the Indian Institute of Science Education and Research Thiruvananthapuram
- Experience of 3 years in studying behavioural and visual ecology of social insects
- Published one peer-reviewed article
- Proficient in data visualization, data wrangling and statistical modelling using R
- Qualified two national level competitive exams and achieved ranks below 100

RESEARCH INTERESTS

Behavioural ecology, Visual ecology, Social behaviour, Understanding the anthropogenic effects on animals

EDUCATION

Indian Institute of Science Education and Research Thiruvananthapuram

Aug. 2015 – Aug. 2020

Integrated BS-MS Dual Degree in Biological Sciences

Thiruvananthapuram, India

- **Relevant Coursework:** Ecology Evolution and Behaviour, Evolutionary Ecology, Ecological Interactions, Neurobiology, Molecular biology, Advanced Genetics and Genomics, Genome Stability, Developmental Biology, Advanced Developmental Biology and Biological Data Analysis
- **Relevant Inter-disciplinary Coursework:** Methods In Structure Determination, Instrumental Methods, Real Analysis, Complex Analysis and Linear Algebra

Undergraduate Record

Aug. 2015 – Aug. 2020

Integrated BS-MS Dual Degree in Biological Sciences

- **Bachelor of Sciences (BS) GPA:** 7.35 / 10
- **Master of Sciences (MS) GPA:** 9.15 / 10
- **Overall GPA:** 8.31 / 10

RESEARCH EXPERIENCE

Visual ecology of the Giant Honey Bee (*Apis dorsata*)

May 2019 - Apr. 2020

Major Degree Thesis

Guide: Prof. Hema Somanathan, IISER-TVM

- Focused on understanding how *A. dorsata* could forage during twilight period despite having day adapted eyes
- Developed a novel training paradigm to train wild *A. dorsata* colonies
- Performed classical conditioning experiments, Y-maze experiments and video analysis
- Performed data analysis and data visualization using R

Morphometric analysis on Asian Bees

May 2018 - Dec. 2018

Semester Project

Guide: Johanna Yourstone, Lund University, Sweden

- Managed and stored around 100 different species of bee specimens and performed basic morphometric measurements

Role of phenylalanine in the Asian Honeybee (*Apis cerana*)

Semester Project

May 2018 - Dec. 2018

Guide: Prof. Hema Somanathan, IISER-TVM

- Focused on understanding whether *A. cerana* could associate amino acids with floral cues
- Performed classical conditioning experiments and video analysis
- Performed data analysis and data visualization using R

Visual associative learning and olfactory preferences of *Vespa tropica*

Internship

May 2017 - Jun. 2017

Guide: Prof. Hema Somanathan, IISER-TVM

- Focused on understanding the learning and behaviour of the Greater Banded Hornet (*Vespa tropica*)
- *V. tropica* is a hymenopteran predator reported as invasive species in Europe whose learning ability and odour preferences are previously unknown
- Gained experience in manuscript writing
- Study was published in [2021](#) and garnered media attention from [The Wire Science](#)

PUBLICATIONS

- Balamurali, G. S., Reshnuraj, R. S., [Johnson, J.](#), Kodandaramaiah, U., & Somanathan, H. (2021). [Visual associative learning and olfactory preferences of the greater banded hornet, *Vespa tropica*](#). In *Insectes Sociaux* (Vol. 68, Issues 23, pp. 217226). Springer Science and Business Media LLC.

SKILL SET

Experimental Skills

- * Experience in training and handling honeybees and hornets for behavioural experiments
- * Experience in honeybee keeping and maintaining honeybee colonies
- * Experience in using spectrophotometer (Maya 2000, Ocean Optics, USA)

Technical Skills

- * Proficient in [statistics](#)
- * Proficient in R programming: Knows ggplot2, ggpubr, ggstatsplot, tidyr and dplyr packages
- * Skilled in statistical modelling using R: [Linear models](#), [Generalized linear models](#), [Generalized linear mixed effects models](#).
- * Familiar with website creation using Rmarkdown, distill and quarto packages in R. Made a [personal blog](#) using quarto
- * Intermediate knowledge in HTML5 and CSS languages
- * Have an Indian Union Driving licence (4-wheeler and 2-wheeler)
- * Wildlife Photography

EXTRA CURRICULAR ACTIVITIES

- R programming enthusiast: Made tutorials on [data visualization](#), [data wrangling](#), [introductory statistics](#) and [statistical modelling](#).
- Co founder of [whatsthisdata](#), a twitter handle promoting science communication through data visualization for the public
- Co-founder of The Ecological Society of IISER-TVM, a student body for promoting environmental awareness and safe guarding the greenery in the campus
- Managed [EcoGO](#), an ambitious project for mapping the entire fauna and flora in IISER-TVM via *iNaturalist*

AWARDS & HONORS

- Achieved all India rank of **52** in Graduate Aptitude Test in Engineering (GATE) 2020 in Ecology and Evolution Paper. GATE score 606 and GATE Reg no: EY20S57226002
- Achieved all India rank of **91** in Council of Scientific & Industrial Research - Junior Research Fellowship (CSIR-JRF) and National Eligibility Test (NET) Exam 2019 Fellowship (Reg no: 367970). This is the qualifying exam for PhD and lectureship in India.
- Received best exhibit award for the project presentation on DNA Hard drives in ANVESH: The IISER-TVM Annual Science Fest (2016)
- Recipient of Innovation in Science Pursuit for Inspired Research (INSPIRE) fellowship. For the duration of 5 years of study in IISER-TVM (2015-2020)

CONFERENCES & PRESENTATIONS

Poster: Visual associative learning and odour preferences in a hymenopteran predator | Biology across kingdoms : School of Biology Symposium and Department day (September 2019) | IISER-TVM, India

Presentation: Role of phenylalanine in learning in Asian honeybee (*Apis cerana*) | Second Bangalore Meeting On Asian Bees (March 2019) | NCBS Bangalore, India

Poster: Visual associative learning in the Greater Banded Hornet (*Vespa tropica*) | Young Ecologists Talk & Interact (YETI) 2018 (January 2018) | Maharaja Sayajirao University of Baroda, India

INTERESTS & HOBBIES

Photography, Badminton, Cycling, Trekking, Birding, Teaching, Listening to music

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