Every moving thing that lives shall be food for you. And as I gave you the green plants, I give you everything.

Genesis 9:3, Bible

Indira Gandhi National Tribal University
Amarkantak (M.P.) 484 887
(www.igntu.ac.in)
ABOUT THE DEPARTMENT

Teaching at the department began in 2008 with temporary faculties in a rented hostel at Amarkantak, which subsequently moved to the newly established campus at Lalpur-Podki on 16th August 2011. The department offers a three-year under-graduate (UG) course designed to provide knowledge on the plant diversity (bacteria to angiosperm), cell biology, genetics, plant physiology, plant ecology, as well as advance knowledge in instrumentation skills, plant tissue culture techniques, and molecular biology. To cater the special need of predominantly tribal population residing around the university, the curricula includes papers on the safeguarding plant related traditional knowledge and development of entrepreneurship skills amongst tribes. Post-Graduate study and PhD programme in the department began from July 2013.

Contact Details:

Department of Botany
Indira Gandhi National Tribal University (IGNTU), Amarkantak
New Academic Buildings, Main campus, Lalpur-Podki, Annupur - 484 887, India
Office Email: hod.botany@igntu.ac.in       Tel: + 91 9406215277

Head of the Department: Prof. Naveen Kumar Sharma

A Snapshot of Courses Being Offered

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Courses offered</th>
<th>Course duration</th>
<th>Eligibility</th>
<th>Intake Capacity</th>
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<tbody>
<tr>
<td>1</td>
<td>B.Sc Botany (Hons)</td>
<td>3 years</td>
<td>10+2 pass candidates in Biology group</td>
<td>30</td>
</tr>
<tr>
<td>2</td>
<td>M.Sc in Botany</td>
<td>2 years</td>
<td>Graduate under 10+2+3 pattern of education from any recognized university with 50% marks in Botany</td>
<td>20</td>
</tr>
<tr>
<td>3</td>
<td>PhD in Botany</td>
<td>As per rules</td>
<td>Master degree in relevant subjects with 55% marks</td>
<td>As per the University rules</td>
</tr>
</tbody>
</table>

Past Head of the Department

Professor Awadhesh Kumar Shukla       Oct 2012- Oct 2015
Faculty Profile

Awadhesh Kumar Shukla, PhD

Title: Dr.  First Name: Awadhesh  Last Name: Kumar

Joined: September 2012

Designation: Professor
Office: Department of Botany
Indira Gandhi National Tribal University (IGNTU)
Amarkantak, M.P. 484 887, India

Residence: A-6, A-Four Type, Block-2
University Staff Quarters,
IGNTU, Lalpur-Pondaki, M.P. 484 887

E-mail: awadhesh.shukla@igntu.ac.in
Tel.: + 91 09407656121 (Mobile)

Educational Qualification:

<table>
<thead>
<tr>
<th>Degree</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>M.Sc. (Botany) (1983)</td>
<td>CSJM University, Kanpur</td>
</tr>
<tr>
<td>PhD (1988)</td>
<td>North-Eastern Hill University, Shillong, Meghalaya</td>
</tr>
</tbody>
</table>

Area of Specialization: Microbiology & Plant-Microbe Interactions

Teaching Experience: > 18 Y at UG and PG levels.

Publications: Total no.: 76

Projects: Completed: 05

Ph. D. students supervised : 08
Post-doctoral student supervised : 01

Member in Editorial Board of Scientific Journals:

- Member, Research on Crop
- Associate Editors-in-chief, World Journal of Agricultural Sciences
- Assistant Editor, Journal of Biological Science
- Assistant Editor, Research Journal of Microbiology
- Member, Bulletin of Pure and Applied Sciences
- Associate Editor, Research Journal of Botany
- Associate Editor, Asian Journal of Biochemistry
- Associate Editor, Asian Journal of Plant Sciences
- Associate Editor, Research Journal of Soil Biology
- Associate Editor, International Journal of Plant Pathology

Member of Academic Societies:
- Society for Advancement of Botany
- Academy of Plant Sciences
- Indian Society of Soil Biology & Ecology
- Indian Society of Ecology
- Indian Society of Soil Science
- Arunachal Science Society

Research Interests
I gained theoretical and practical knowledge as a PhD research scholar on the microbial ecology and biochemistry at the Department of Botany, North-Eastern Hill University, Shillong, India. My research area includes plant-microbes interaction and soil microbiology, with an aim to understand the role and function of microbes in natural ecosystem. This has important implication for land restoration and soil management in agriculture. Especially relating to - studies of physico-chemical properties and their impact on microbial (fungal & bacterial) population, enzymatic activities in agro-ecosystem, ecology of the rhizospheric and phyllospheric fungi of crop plants against application of fungicides and herbicides, role of fungi and bacteria with respect of mineral nutrient cycling, role of mycorrhizal fungi in growth, development and functioning of plants and how does it change with soil component and climates studies on endophytic fungi for anti-microbial metabolites. I am also working on documentation and exploitation of hydrogen producing bacteria for biomass conversion and hydrogen production to use as bio-fuel.

Representative Publications:


Administrative Responsibilities:
1. Head, Department of Botany, Rajiv Gandhi University, Itanagar (2008 to 2011)
2. Chairman, Board of Under-Graduate & Post-Graduate Studies, Department of Botany, Rajiv Gandhi University, Itanagar (2008 to 2011)
5. Dy. Coordinator, Biodiversity Programme, RGU, Itanagar (2010-2012)
6. Member, Executive Council, IGNTU (2015)
7. Member, Academic Council, IGNTU (2012- till date)
8. Dean, Faculty of Science & Computronics, IGNTU (2012-2015)
9. Head, Department of Botany, IGNTU (2012-2015)
11. Member, IQAC, IGNTU, Amarkantak
12. Dean, Faculty of Technical, Vocational Education & Skill Training (2016 – contd.)
Naveen Kumar Sharma, PhD

Title: Dr. First Name: Naveen Kumar
Last Name: Sharma

Designation: Professor

Office: Department of Botany, Indira Gandhi National Tribal University (IGNTU)
Amarkantak, M.P. 484 887, India

Residence: A-9, Block-1, Type Four University Staff Quarters
IGNTU, Lalpur-Pondaki, M.P. 484 887,

E-mail: naveen.sharma@igntu.ac.in
Tel.: + 91 9406215277 (Mobile)

Educational Qualification:

<table>
<thead>
<tr>
<th>Degree</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>M.Sc. (Botany)</td>
<td>Banaras Hindu University, Varanasi</td>
</tr>
<tr>
<td>NET</td>
<td>CSIR, New Delhi</td>
</tr>
<tr>
<td>PhD</td>
<td>Jiwaji University Gwalior, M.P.</td>
</tr>
</tbody>
</table>

Area of Specialization: Cyanobacteriology & Ecology

Teaching Experience: > 16 Y (w.e.f. April 3, 2001 - continuing) at UG and PG levels.

Post-doctoral Training: Department of Molecular Genetics & Microbiology, University of Texas at Austin, USA (with Prof. Richard Malcolm Brown Jr.)

Awards: IUSSTF Fellow – 2010 (www.iusstf.org)

Publications: Total no.: 42 (International & refereed- 39; National: 02, non-refereed: 01)

Book Authored/Edited: Published: 03 (International); Ongoing: 01

Projects: Completed: 02 Ongoing: 01

Book Authored/Edited: Published: 03 (International); Ongoing: 01

Projects: Completed: 02 Ongoing: 01

New Species/Strains Isolated: *Nostoc* sp. BHU001 (GenBank, Accession No. EU570209)


Membership: Member, *International Organization for Plant Proteomics* (NIPPO), Sukuba, Japan; Member; *Spanish Phycological Society*, Spain (2009- contd.)

Research Interests:

I did my PhD on the eco-physiology of airborne microalgae. Subsequently, worked on the onset and development of harmful cyanobacterial blooms in local freshwater bodies; Cyanotoxin producing cyanobacteria; Effect of the Pi-deficiency on cyanobacterial growth and metabolism including strategies adopted by different cyanobacterial to survive under P-limited & salt stressed conditions, with Prof Ashwani K Rai's group (Deptt of Botany, BHU). I also received training on potential utilization of cyanobacteria for ethanol production.
Recently, I started working on impact of different socio-economic job-guarantee schemes and developmental projects on rural ecology. Also, on use of scientific intervention to validate ethnomedicinal knowledge of local tribes in and around Amarkantak region of Madhya Pradesh (India).

Recent publications (up to 05)


Current Administrative Responsibilities:

1. Member, Executive Council, IGNTU, Amarkantak (M.P.) (2016 –contd.)
2. Member, Academic Council, IGNTU, Amarkantak (M.P.) (w.e.f. 18/05/2013)
3. Dean, Faculty of Science, IGNTU (w.e.f. October 2015)
4. Head, Department of Botany, IGNTU (w.e.f. October, 2015)
5. Chairman, Board of Studies in Botany, IGNTU, Amarkantak
6. Member, IQAC, IGNTU, Amarkantak
7. Vice-Chancellor nominee to the University Disciplinary Committee
Tantravahi Srinivasan, Ph.D.

Title: Dr. First Name: Srinivasan Last Name: Tantravahi

Designation: Associate Professor in Botany

Office: Department of Botany,
Indira Gandhi National Tribal University (IGNTU)
Amarkantak, M.P. 484 887, India

Residence: 16,Type III, New University Staff Quarters
IGNTU, Lalpur-Pondaki, M.P. 484 887,
E-mail: saveplants@gmail.com; srinivasan@igntu.ac.in
Tel.: + 91-9440025015 (Mobile)

Educational Qualification:

<table>
<thead>
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<th>Degree</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>M.Sc. (Biotechnology)</td>
<td>Andhra University, Visakhapatnam</td>
</tr>
<tr>
<td>Ph.D.</td>
<td>University of Hyderabad, Hyderabad</td>
</tr>
</tbody>
</table>

Area of Specialization: Stress Biology and Bioactive Principles

Total Teaching Experience: > w.e.f. 22 Sep., 2008 - continuing) at UG and PG levels.

Publications: Total no.: 14

Projects: 03 (UGC, & DBT, New Delhi)


Awards:

Stood first in B.Sc. and M.Sc.
Qualified Andhra Pradesh State Eligibility Test;
Received SIROHI Award from Indian Society of Plant Physiology for best publication
Selected for three consecutive years for U.P.E (University for potential of Excellence) Fellowship.

Research Interests:

I believe that no plant is explored to its potential for the secondary metabolites. Few compounds from different plants have been isolated and characterized but it is still under explored. Many secondary metabolites have not been studied for their importance due to their low level of expression under the given conditions. If a potential compound is identified, there is a possibility that the plant species would be over exploited and gradually would become endangered. The secondary metabolites are generally induced under stress conditions, which can be exploited to produce the targeted metabolite thus isolating more from the given plant and conserving the prized plant species.

My doctoral study has made me understand the stress perception and response of the plant. I believe that research should go beyond the journals or books and reach the common man. In this regard, I have learnt the isolation and
characterization of bioactive compounds from plants and microorganisms by completing a project and supervising a PhD. Presently, my areas of research are to understand the pathways of secondary metabolite production and standardize the protocols for their up-regulation by inducing different stress conditions. Further, I will try to enhance my understanding of abiotic stress Viz. salinity, drought etc. impact and responses of plants.

Recent publications (up to 5)


3. Manoj Kumar M, Raj Kumar K, T Srinivasan (2015), Success of the PCR-Based Replication Assay Depends on the Number of Methylation Sensitive Restriction Sites in the PCR Amplifying Region. Cellular & Molecular Biology, 2, 61(3), 1-5.


Ravindra Shukla, PhD

Title: Dr. First Name: Ravindra Last Name: Shukla

Joined: September 2012

Designation: Assistant Professor
Office: Department of Botany, IGNTU
        Amarkantak, (MP) 484 887,
Residence: B-18, Old University Staff Quarters, IGNTU,
        Amarkantak, M.P. 484 887,
E-mail: ravischolarbhu@gmail.com; ravindra.shukla@igntu.ac.in
Tel.: + 91 8656948490 (Mobile)

Educational Qualification:

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<tr>
<td>M.Sc. (Botany)</td>
<td>Banaras Hindu University, Varanasi (2004)</td>
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<td>NET</td>
<td>CSIR, New Delhi (2004)</td>
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<tr>
<td>PhD</td>
<td>Banaras Hindu University, Varanasi</td>
</tr>
</tbody>
</table>

Area of Specialization: Phytochemistry, MAPs, Bioprospection of plants, Bionanotechnology

Teaching Experience: > 5 Y both at UG and PG levels.
Previously, Served in Food & Drug Administration, UP as Jr. Food Analyst

Awards:
Certificate of Merit Award by India Botanical Society (IBS 2007);
Best Paper Award in Annual Meeting of Indian Phytopathological Society (IPS-2006);
President Young Scientist Award (2016)

Publications: Total no.: 31 (International & refereed- 26; National: 05)
Citations: 1356; h-index 20; i10 –index 24
Projects: Ongoing: 03 (UGC, DST-SERB, DST-NRDMS funded)
Reviewer: Protoplasma, Journal of Food Quality

Research Interests:
My thrust area of research is exploration of newer phytochemicals with certain biological activity. I did my PhD on development of botanical pesticides having antifungal, aflatoxin inhibitory, insecticidal and antioxidant activity. New areas of my current researches are green synthesis of metallic nanoparticles and documentation of traditional knowledge.

Recent publications (up to 05)
1. Ravindra Shukla, Priyanka Singh, Bhanu Prakash, Ashok Kumar, NK Dubey (2012) Antifungal, aflatoxin inhibition and antioxidant activity of Callistemon lanceolatus (Sm.) Sweet essential oil
and its major component 1,8-cineole against fungal isolates from chickpea seeds, *Food Control*, 25, 27-33.


**Administrative Responsibilities:**

1. Member, Board of Studies in Department of Botany, IGNTU, Amarkantak
2. Placement Coordinator for the Department of Botany, IGNTU, Amarkantak
3. Member, Board of Studies in Department of Chemistry, IGNTU, Amarkantak
Anirudh Kumar, **PhD**

**Title:** Dr.  
**First Name:** Anirudh  
**Last Name:** Kumar

**Designation:** Assistant Professor

**Office:** Department of Botany,  
IGNTU, Amarkantak (MP) 484 887, India

**Residence:** Transit Hostel-16, University Staff Quarters  
IGNTU, Lalpur-Pondaki, M.P. 484 887,

**E-mail:** anirudh.kumar@igntu.ac.in  
**Tel.: +** 91-9630027893 (Mobile)

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**Educational Qualification:**

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<tbody>
<tr>
<td>MSc (Plant Sciences)</td>
<td>University of Hyderabad, Hyderabad</td>
</tr>
<tr>
<td>PhD</td>
<td>University of Hyderabad, Hyderabad</td>
</tr>
<tr>
<td>NET</td>
<td>ICAR, New Delhi</td>
</tr>
</tbody>
</table>

**Area of Specialization:** Plant-Microbe Interactions

**Teaching Experience:** > w.e.f. March 15, 2016 - continuing at UG and PG levels.

**Post-doctoral Training:**

PBC-Postdoc Fellow: Deptt of Post-harvest Sciences, Agriculture Research Organization (ARO)-Israel (Dec, 2015-March 2016).


Research Associate (RA): ICRISAT, Hyderabad, India (July 2013 - 10 December 2013).

**Awards & Honors:**

IASc- INSA- NASI Summer Research Fellowship -2017

PBC Postdoctoral Fellowship- The Planning and Budgeting Committee (PBC) Postdoctoral Fellowships for Outstanding Post-doctoral Fellows from China and India-2015/2016

DAAD Scholarships- "A New Passage to India and Pre-PhD Modules in Life Sciences 2011

Merit cum Mean Scholarship: University of Hyderabad during MSc studies (2003 2005)

Excellent Paper: ICFEB 2011, Bangkok, Thailand

National Certification- ARS NET-2014, DBT-RA-2013/14, India

**Research Interests:**

*I am fascinated in understanding the mechanism of plant-pathogen interaction using proteome-based expression profiling. The model system is interaction between rice as host and Xanthomonas oryzae pv. oryzae (Xoo) as bacterial pathogen. Identification and characterization of host proteins whose abundance is affected by pathogen challenge is imperative in interpreting their roles in mediating the host immune response. Of particular interest are innate immune responses that are induced by cell wall degrading enzymes of Xoo such as cellulases (ClsA and CbsB), lipase/esterase (LipA), and xylanase (XynB)*
Recent publications:


Book Chapters:

Noam Alkan, **Anirudh Kumar** (2017), Post-harvest storage management of mango fruit. Burleigh Dodds Science Publishing Limited, BDS_Chapter 16_Mangoes V1.indd 1 DS_Chapter 16_Mangoes V1.indd 1, http://dx.doi.org/10.0000/00000.0000

Subha Narayan Das, PhD

Title: Dr.  First Name: Subha Narayan  Last Name: Das

Joined: June 2017

Designation: Assistant Professor

Office: Department of Botany,
Indira Gandhi National Tribal University (IGNTU)
Amarkantak, M.P. 484 887, India

Residence: Qr. No.-14, Transit Hostel, IGNTU,
Lalpur-Pondaki, M.P. 484 887

E-mail: subha.bunu@gmail.com; subh.bunu@igntu.ac.in
Tel.: + 91 8886195594 (Mobile)

Educational Qualification:

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<th>Degree</th>
<th>Institution</th>
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<tbody>
<tr>
<td>M.Sc. (Plant Sciences (Biotechnology))</td>
<td>University of Hyderabad, Hyderabad</td>
</tr>
<tr>
<td>PhD (Plant Sciences)</td>
<td>University of Hyderabad, Hyderabad</td>
</tr>
<tr>
<td>NET</td>
<td>CSIR, New Delhi &amp; ICAR, New Delhi</td>
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Area of specialization: Enzymology, Microbial biotechnology and Molecular plant-microbe interactions

Teaching Experience: w.e.f. June 08, 2017 – till date at UG and PG levels

Publications: Refereed journals – 07; Chapters in book – 05

Postdoctoral training: Post-doctoral Research Associate (2016 – 2017) in a European Union sponsored project, University of Hyderabad

Awards & Honors:

- Best PhD thesis award for the year 2016 by the Department of Plant Sciences, University of Hyderabad
- Travel award from DST-SERB (2015) for paper presentation in the 12th International Conference of the European Chitin Society/13th International Conference on Chitin and Chitosan (EUCHIS/ICCC 2015) held at Muenster, Germany
- Member of collaborative doctoral research projects (2012 – 2015) of Indo-German International Research Training Group on Molecular and Cellular Glyco-Sciences (IRTG-MCGS)
- DFG fellowship for research stay at the University of Muenster, Germany (August – December, 2014)
- DFG fellowship for research stay at the University of Muenster, Germany (August – December, 2013)
Research interest:
A country like India where agriculture is the main stray of the economy often faces crop losses due to several biotic stresses. Therefore, my long term interest is to focus on host pathogen interactions to explore different options to effectively use host plant resistance for control of infectious diseases in plants. Use of synthetic chemicals has not only been harmful to the environment and to the consumer, but also contributed to rapid evolution of resistant pathogen strains. Application of novel bio-active molecules such as elicitors or priming inducers might provide additional tools for crop protection, less prone to resistance development in the pathogens. In this direction, my lab is aiming at to explore the use of enzymes for synthesis of bio-active molecules from carbohydrate biomass. The research approaches include; mining genome sequence information, molecular cloning and heterologous expression of carbohydrate degrading/modifying genes, protein engineering, priming and elicitor assays in plants.

Recent Publications:
Nayan Sahu, PhD

Title: Dr. First Name: Nayan Last Name: Sahu

Designation: Assistant Professor

Office: Department of Botany, IGNTU

Amarkantak (MP) 484 887, India

Residence: University Campus

IGNTU, Lalpur-Pondaki, M.P. 484 887

E-mail: sahunayan60@gmail.com; nayansahu@igntu.ac.in

Tel.: (+91) 9452679978

Educational Qualification:

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<tr>
<td>MSc (Botany)</td>
<td>University of Lucknow, Lucknow</td>
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<td>NET</td>
<td>UGC, New Delhi</td>
</tr>
<tr>
<td>PhD</td>
<td>CSIR-National Botanical Research Institute</td>
</tr>
</tbody>
</table>


Publications: Total no.: 16

Projects: 01 (DST-SERB, New Delhi) - Ongoing

Awards:

1. National Post-Doctoral Fellow Award (NPDF) from DST, GOI in the year 2017.
2. CSIR-Senior Research Fellow Award (CSIR-SRF) 2012.

Research Interests:

I am an Eco-physiologist focusing on the interface of plants and environment at the physiological level. I am concerned with environmental variation and plant response at scales of minutes and centimeters integrated over larger scales. My research interests include studying mechanisms that underlie community structure, composition and eco-physiological dynamics of understory species in tropical deciduous forests and exploring relationships between understory microclimate, tree photosynthetic performance, growth and biomass allocation patterns and species association in contrasting forest ecosystems involving plant species from different life forms. I am also interested and involved in studies focusing on ecosystem fluxes of carbon and water in diverse ecosystems and the effect of anthropogenic and microclimate influences over them.

Currently, I am extending my research to develop individual based model for calculating total carbon sequestration capacities (including component sharing) in contrasting forest ecosystems amalgamating all growth forms. The overall focus of my research aims to refine large gaps in dynamic global vegetation models (DGVM's) predicting...
ecosystem responses to climate change by generating quality field data by extensive field studies to be subsequently used in refining net carbon exchange and sink capacities for different forest ecosystems.

Recent publications (up to 5):


Laboratory Assistant
Mr. Chintamani Tandiya

PhD Students
1. Mr. Mishri Lal
2. Mr. Sandip Kumar Chandraker
3. Mr. Nitesh Singh
4. Ms. Anunnay Toppo
5. Mr. Birjhu Singh Shyam
Department Related Photographs
Laboratories