

Dr. Arvind Goja



Designation: **Assistant Professor,**
Dr. D.Y. Patil Biotechnology & Bioinformatics Institute,
Dr. D.Y. Patil Vidyapeeth, Pune

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EDUCATIONAL QUALIFICATIONS:

- **PhD in Nutrition and Food Science (2011)**- Wayne State University, Detroit, MI, USA
- M.Sc. in Biochemistry (2004) – Maharaja Sayajirao University, Vadodara, Gujarat, India
- B.Sc. (Hons.) in Biochemistry and Voc. Degree in Biotechnology (2002) – St. Xavier's College, Ahmedabad, Gujarat, India
- Higher Secondary in Science (1999) – Jammu and Kashmir State Board, India

POSTDOCTORAL TRAINING:

- **Research Associate**, Wayne State University, Detroit, MI, USA (2011-2014)
- **Visiting Research Specialist**: Dept. of Pharmacology, University of Illinois at Chicago. (2014-2015)

EMPLOYMENT EXPERIENCE:

- **Research Associate**: Wayne State University, Detroit, MI, USA (2011-2014)
- **Research Specialist**: Dept. of Pharmacology, University of Illinois at Chicago. (2014-2015)

- **Assistant Professor:** Dr. D.Y.Patil Biotechnology and Bioinformatics Institute, Pune India (2016-Current)

FIELD OF SPECIALIZATION:

Metabolomics, Nutraceuticals and Ayurvedic Herbs, Cancer, Neuro-degenerative Diseases, Toxicology

Specific Areas of Research Interest:

- Effect Of Nutraceuticals and Ayurvedic Herbs in different Disease Conditions.
- Use of Metabolomics Approach to find potential early Biomarkers.
- Recently I have developed interest in evaluating effects of certain frequencies on living systems.

AWARDS/HONOURS/MEMBERSHIP OF VARIOUS ACADEMIC BODIES:

Awards/Achievements:

- **Coca-Cola Company Research Award** for poster competition for 'Diet and Cancer Research Interest Section'. (Experimental Biology Conference, New Orleans, 2009)
- **Thomas C. Rumble University Graduate Fellowship**, Wayne State University, Department of Nutrition and Food Science, Detroit, Michigan (2005-2006)
- **Gold medal awardee** for LUMC fellowship by the Grace Braganza Research Lab (GBRL) St. Xavier's College, Ahmadabad, India for research and submission of *Project on Plant Tissue Culture and phytochemistry of Vincarosea* (2001-2002).

Fellowships:

- **Thomas C. Rumble University Graduate Fellowship**, Wayne State University, Department of Nutrition and Food Science, Detroit, Michigan (2005-2006)

Membership in Scientific Societies:

- American Society for Nutrition (2009 –2015)
- American Federation of Teachers
- Graduate Employees' Organizing Committee (WSU, GEOC)
- Nutrition and Food Science Graduate Student Organization (Associate member)
- Phi Tau Sigma WSU Chapter (Founding Member)

ACADEMIC ACTIVITIES:

Teaching & Research Experience:

1. **Graduate Teaching Assistant**, Wayne State University (5 years)
2. **Assistant Professor**, Dr. D. Y. Patil Biotechnology and Bioinformatics Institute, Dr. D Y Patil Vidyapeeth, Tathawade, Pune (4.2 years)
3. **Recognized Ph.D. Research Guide** in Biotechnology at Dr. D.Y Patil Vidyapeeth, Pune (> 2 years)

4. **Paper-setter and/or Examiner (B. Tech., M. Tech., M.Sc.)** for Dr. D. Y. Patil Biotechnology and Bioinformatics Institute.

5. **July 2014– August 2015:**

- Worked as Research Specialist at Toxicology Research Laboratory (Dept. of Pharmacology), University of Illinois at Chicago. The projects involved evaluating different novel drugs for efficiency/dose as radioprotectors and radiomitigators in various cells lines and in-vivo models.

6. **2011– July 2014:**

- Involved with evaluation of plasma metabolites (metabolomics) for chronic hemodialysis patients with vitamin E tocotrienol supplementation and correlating with their plasma lipid profiles and investigating probable biomarkers for the disease.
- Evaluated the effect of Oil Palm Phenolics (OPP) and curcumin in Alzheimer's disease (AD) rat model. Evaluating cognitive behavior and memory of AD induced rat model using water maze experiments. Magnetic resonance Imaging (MRI) was used to detect any changes in the brain volume, plaque deposition and other parameters.
- Correlated the effect of Oil Palm Phenolics (OPP) and curcumin in Alzheimer's disease (AD) rat model using urine metabolomics and to discover early potential biomarkers for AD.
- Explored the anti-carcinogenic effect of Oil Palm Phenolics (OPP) in pancreatic tumor transgenic KPC mouse model
- Studied the anti-carcinogenic effect of garcinol in pancreatic tumor transgenic KPC mouse model. Correlation of urinary metabolomic profile with mRNA and protein expression in liver and pancreatic tissue, as well as ultrasound and MRI images of tumor progression/regression.
- Evaluated the effect of algal infusion Proalgazyme (PAZ) on lipid metabolism in a diet induced hypercholesterolemic hamster model. Correlation of plasma lipoprotein profile with mRNA and protein expression in the liver tissue
- Investigated biomarkers associated with hypercholesterolemia and administration of PAZ, and any specific compounds responsible for the increase in HDL cholesterol using the metabolomics approach.
- Evaluated the Effects of Oil Palm Phenolics on Inflammation and oxidative stress in relation to amyloid beta plaques in FAD-mutant and wild type B103 Cells.
- Investigate the treatment of non-small cell lung cancer with delta-tocotrianol and its effect on cell growth, apoptosis, and NF-kB signaling pathway. Investigation of relative transcription levels of correlated genes, protein expression, and miRNA microarray.
- Review of scientific literature and determine scientific conclusions, assist in grant/proposal preparation and submission, prepare and deliver presentations at national and international meetings.
- Provided task-oriented support for graduate and undergraduate students

7. **2005-2011:**

- Ph.D. in Nutrition and Food Science, Wayne State University, Detroit, MI **Dissertation Title: Metabolomic Profiling to Investigate Effect of Curcumin in Lung Cancer.**
Major: Nutritional Biochemistry
Minor: Human Physiology.
My dissertation involved evaluating effect/s of curcumin in lung cancer induced hamster model and to correlate and compare urinary metabolomic profile with the DNA fragmentation.
- Investigated the effect of curcumin in a lung cancer hamster model, analyzing the histo-pathological evidence.
- The project involved discovering potential early biomarkers for lung cancer.

Along with my dissertation thesis worked simultaneously on various other projects in collaboration with other labs.

- Evaluated metabolomic profile for the project “Multi-functional approach for assessing diet-induced hypercholesterolemia on brain cholesterol metabolism in aged Brown Norway rats – a possible model for Alzheimer’s disease” in collaboration with Dr. Pramod Khosla’s research group.
- Evaluated urinary metabolomic profile of control and pre-eclamptic pregnant women in collaboration with Wayne state medical school.

8. **2002-2004:**

- **Masters dissertation title:** “Anti-Diabetic effect of methanolic extract of *Enicostemmalittorale* Blume on carbohydrate metabolic enzymes and glycogen content in alloxan induced diabetic rats.”

9. **1999-2002:**

- **B.S.:** Plant tissue culture of Cordylene and Caladium at the Xavier Research Foundation, Ahmadabad (2000-2002)

10. Worked on a techno-commercial project ‘An Entrepreneurial venture for Mushroom Cultivatio

No. of Ph.D., Postdoctoral, B. Tech, M. Tech. /M.Sc. students Guided:

1. Ph. D. : Nil
2. Postdoctoral : Nil
3. M.Sc, M.Tech and B. Tech: More than 20 so far.

No. of Funded/Non-Funded (as Fellow) Research Projects Completed and in Hand:

- A. Awarded research grant for Rs. 22,00,000 (INR) (2017-2020) as a principle investigator for the project titled “*Functional outcome of Curcumin effects on genetically homogeneous tumors and identification of its tumor molecular targets for fine-tuning therapeutic outcomes*”. The Project has been sanctioned by Dr. D. Y. Patil Biotechnology and Bioinformatics Institute, Pune India.
- B. Awarded research grant for Rs. 10,66,000 (INR) (2017-2020) as a Co- investigator for the project titled “*In silico and in vivo studies to look for Aromatase inhibitors for cancer therapy*”. The Project has been sanctioned by Dr. D. Y. Patil Biotechnology and Bioinformatics Institute, Pune India.

Anonymous Reviewer: None

International Journals: None

In Charge/Member in Different Internal Committees (Administrative/Research /Academic Committees:

- **Student Welfare Committee-Member**
- Successfully conducted Council Elections at DYPBBI. This was the first time ever at DYPBBI Tathawade campus that student council was elected that too online. The whole process of casting votes, campaigning and result of the elections took only 3-4 hours and that too without any use of paper (green elections).
- **Joint Secretary of Anti Ragging Committee and Anti-Ragging Squad:** The responsibilities include taking prompt actions against any reported or filed incidents of ragging on campus and in Hostels.
- **Member of Extra-curricular extension and sports committee.** The responsibilities include arranging and managing annual sports even and any other cultural festivals. Organizing annual cultural festival and arranging inter-college events. I am thoroughly involved with arrangements of our annual sports events

(URJA) and annual cultural festival (Cytosoul)

- **Member of the Alumni and Placement committee.** This is one of the important committees with regards to the future of the students. The responsibilities include interaction with students and advising them for their future goals. Organizing various industrial and academic job-oriented workshops. Maintaining database of the alumni and organizing various alumni student interactions sessions which helps current students to understand the job market and needs of the industry outside the campus life. Lots of emphasis is given on soft-skill development and students are encouraged to organize mock interviews.
- **Secretary of Hostel committee/Canteen committee.** The responsibilities include taking care of food and lodging of the students. There are regular follow ups to check the quality of the food that is served in the mess and in the canteen. I am also Warden of the Boys' hostel and that includes additional responsibility of taking care of the students after college hours and making sure they get all the facilities and amenities that were promised to them.
- **Secretary of the Store and Equipment Purchase Advisory Committee and Stores (SEPAC).** As a secretary my responsibilities include making sure that all the scientific equipment that are purchased by the department or any research lab satisfies all the norms and regulations that has been laid off by the committee. The purchase is made only after chairman and secretary has approved with the help of EPAC members.
- **COVID-19 Helpline Committee.** I am member of COVID-19 helpline committee which requires members to reach out to students via various platforms and ask for their mental and physical health. We also sent surveys regarding their mental well-being.
- **Member of Admission Committee:** As a member of admission committee, we guide new potential students and their parents about the admission process and any other enquiry they have regarding the courses we offer, hostel, admission fee etc. We also reach them over the phone to convince them and make sure they chose our institute for the degree.

RESEARCH PAPERS IN PEER REVIEWED JOURNALS:

(a) Publications (Original Paper):

1. Dietary Garcinol Arrests Pancreatic Cancer in p53 and K-ras Conditional Mutant Mouse Model. Nadia Saadat, Sarah Akhtar, **Arvind Goja**, Nurul H. Razalli, Andreea Geamanu, Doina David, Yimin Shen & Smiti Vaid Gupta. *Nutrition and Cancer*, Pages:1-13, Oct 1, 2018.
2. Bioethical Concerns of CRISPR: a genome editing technology. Ashima Bhan, Satish Sasikumar, **Arvind Goja**, Rajendra TK (Review Paper), *Global Bioethics Enquiry The Scholarly Publication of the UNESCO Chair in Bioethics*, Volume 5, Issue:2, September 2017, Page 68-72.
3. ProAlgaZyme subfraction improves the lipoprotein profile of hypercholesterolemic hamsters, while inhibiting production of betaine, carnitine, and choline metabolites Andreea Geamanu, **Arvind Goja**, Nadia Saadat, Pramod Khosla, Smiti V Gupta *Nutrition & Metabolism* 2013, **10:55** (27 August 2013)
4. "Delta-tocotrienol suppresses Notch-1 Pathway by Up-regulating miR-34a in Non-small Cell Lung Cancer Cells". (*International Journal of Cancer* 2012, Mar. 21) Ji X, Wang Z, Geamanu A, **Goja A**, Sarkar FH, Gupta SV.
5. ProAlgaZyme and its sub-fractions increase plasma HDL-cholesterol via up regulation of ApoA1, ABCA1 and SRB1 and inhibition of CETP in hypercholesterolemic hamsters. (*J of Nutrition and Dietary Supplements*. 2012;4, 17-14). Andreea Geamanu, Nadia Saadat, **Arvind Goja** and SVGupta

6. ProAlgaZyme and its Subfractions improve Hamster plasma lipid profile via down regulation of CETP gene expression. Proceedings of the National Conference of Undergraduate Research (NCUR) 2011, Ithaca, NY. Sarah Akhtar, Andreea Geamanu, Nadia Saadat, **Arvind Goja**, Smiti Gupta

(b) Manuscripts under communication:

1. Change in metabolomic profile with curcumin supplementation in a lung cancer model (submitted to Nutrition and Metabolism) **Arvind Goja**¹, Andreea Geamanu¹, Nadia Saadat¹, Xiangming Ji¹, Doina David² and Smiti V Gupta¹

(c) Manuscripts under preparation:

1. Positive correlation between urinary metabolomic profiles and diet induced B-amyloid plaque Development in aged Brown Norway Rats. **Arvind Goja**, Naomi Yamada, Pramod Khosla and Smiti Gupta. (manuscript in progress)

(d) Book Chapter:

1. "Potential of tocotrienols in lung cancer." Book Chapter (Book title: Tocotrienols; Vitamin E Beyond Tocopherols, second edition). Xiangming Ji, **Arvind Goja** and SV.Gupta, 2012

(f) Posters presented:

PUBLISHED ABSTRACTS

1. The Effect of oil palm phenolics (OPP) on Pancreatic Ductal Adenocarcinoma (PDAC) in Transgenic Mouse Model. *FASEB J April 1, 2016, Abstract no.147.2*
2. Nadia Saadat, **Arvind Goja** and Smiti Gupta Dietary garcinol retarded pancreatic cancer progression in kras and p53 transgenic mouse model. *April 2014 The FASEB Journal vol. 28 no. 1 Supplement 829.29*
3. **Shilpa Vemuri, Arvind Goja, Nadia Sadaat, Poornima Gowthaman, Michael Chrusciel and Smiti Gupta**, Effect of oil palm phenolics (OPP) on pancreatic cancer (PC) in transgenic mouse model (KPC)(*FASEB J. April 2013, 27 (Meeting Abstract Supplement) 863.10*)
4. Andreea Geamanu, Nadia Saadat, Arvind Goja, Smiti Gupta. Effect of an algal infusion (AI) on plasma metabolomic profile in hypercholesterolemic hamsters. *FASEB J April 9, 2013 27:1073.4*
5. Nadia Saadat, Sarah Akhtar, Aminder Gill, Nurul Razalli, Shilpa Vemuri, **Arvind Goja**, Andreea Geamanu, Doina David, Smiti Gupta. Anticancer effects of Garcinol in pancreatic cancer transgenic mouse model. *FASEB J April 9, 2013 27:235.8*
6. Andreea Geamanu, Nadia Saadat, **Arvind Goja**, Smiti Gupta. Effect of ProAlgaZyme on plasma lipid profile in diet induced hypercholesterolemic hamsters. *FASEB J March 29, 2012 26:1015.9*
7. Andreea Geamanu, Nadia Sadaat, **Arvind Goja**, Monika Wadehra, Xiangming Ji, Smiti Gupta. Algal Extract and its subfractions increase plasma HDL-Cholesterol via up-regulation of Apo A1, ABCA1, SRB1 and inhibition of CETP in hamsters. *FASEB J March 17, 2011 25:594.2*
8. **Arvind Goja**, Andreea Geamanu, Nadia Saadat, Smiti V. Gupta. Potential 1H NMR urinary metabolomic biomarkers for Lung cancer in hamster model. *FASEB J March 17, 2011 25:984.1*
9. Shaistha Zaheeruddin, **Arvind Goja** and Smiti Gupta. Effect of Curcumin on BOP Induced Oxidative Stress in Hamster Model: Correlation with Metabolomic Profile, *FASEB J April 2010*
10. Andreea Geamanu, **Arvind Goja**, Shaistha Zaheeruddin, Smiti Gupta. Efficacy of curcumin in lung cancer hamster model. *FASEB J April 22, 2009 23:897.16*
11. **Arvind Goja**, Shaistha Zaheeruddin, Andreea Mateescu, Nadia Sadaat, Smiti V. Gupta. Effects of curcumin on Lung cancer; Metabolomic Approach. *FASEB J April 22, 2009 23:897.15*

12. **Naomi Yamada, Deepinder Kaur, Arvind Goja, Mo'ath Bataineh, Ryan H Saab, Susan M Irtenkauf, Scott E Bowen, Smiti V Gupta and Pramod Khosla** . Multi-functional approach for assessing diet-induced hypercholesterolemia on brain cholesterol metabolism in aged Brown Norway rats – a possible model for Alzheimer's disease (*FASEB J. April 2007*21 (*Meeting Abstract Supplement A109*))

POSTER PRESENTATIONS

1. Selection of Novel Aromatase Inhibitors using Molecular Docking Studies. Accelerating biology 2019, C-DAC, **5th-7th Feb, 2019** IISER Pune Khushboo Pandey, Kiran Bharat Lokhande, **Arvind Goja** and Shuchi Nagar.
2. **Arvind Goja**, Hyojin Jeon, Anahita Daruwalla, Aryamitra Banerjee, RajanGiri, KasimKabirov and Alex Lyubimov. ATM-14, a Novel Anti-Oxidant Radio-Mitigator Targeting Mitochondria. Oxidative Injury and Redox Biology, Poster Session, Society of Toxicology, 54th Annual meeting (Mar 22nd -26th, 2015)
3. Geamanu, Nadia Sadaat, **Arvind Goja**, Smiti Gupta. Effect of ProAlgaZyme on plasma lipid profile in diet induced hypercholesterolemic hamsters. EB April 2013, Boston, MA
4. Andreea Geamanu, Nadia Sadaat, **Arvind Goja**, Smiti Gupta. Effect of ProAlgaZyme on plasma lipid profile in diet induced hypercholesterolemic hamsters. EB April 2013, Boston, MA
5. Nadia Saadat, Sarah Akhtar, Fadi Abdulahad, Andreea Geamanu, **Arvind Goja**, ShilpaVemuri, Nurul Razalli, Smiti Gupta. Anticancer effects of garcinol in pancreatic cancer transgenic mouse model, Wayne State University Graduate Student Research Day, Sept 2012, Detroit, MI
6. Andreea Geamanu, Nadia Sadaat, **Arvind Goja**, Smiti Gupta. Effect of ProAlgaZyme on plasma lipid profile in diet induced hypercholesterolemic hamsters. EB 2012, San Diego, CA
7. Andreea Geamanu, Nadia Sadaat, **Arvind Goja**, Monika Wadehra, Xiangming Ji, Smiti Gupta. Algal Extract and its subfractions increase plasma HDL-Cholesterol via up-regulation of Apo A1, ABCA1, SRB1 and inhibition of CETP in hamsters. EB 2011, Washington D.C.
8. **Arvind Goja**, Andreea Geamanu, Nadia Sadaat, Smiti V. Gupta. Potential 1H NMR urinary metabolomic biomarkers for Lung cancer in hamster model. EB, Washington, D.C.
9. Andreea Geamanu, Nadia Sadaat, **Arvind Goja**, Monika Wadehra, Xiangming Ji, Smiti Gupta. Algal Extract and its subfractions increase plasma HDL-Cholesterol via up-regulation of Apo A1, ABCA1, SRB1 and inhibition of CETP in hamsters. Wayne State University Graduate Conference 2011, Detroit, MI
10. Inaam Abdul Karim, Andreea Geamanu, Nadia Saadat, **Arvind Goja**, Smiti Gupta. Time course for improvement in hamster's lipid profile after administration of ProAlgaZyme. Wayne State University Undergraduate Research Conference 2010, Detroit, MI
11. Sarah Akhtar, Andreea Geamanu, Nadia Saadat, **Arvind Goja**, Smiti Gupta. ProAlgaZyme and its Subfractions improve Hamster plasma lipid profile via down regulation of CETP gene expression. Wayne State University Undergraduate Research Conference 2010, Detroit, MI
12. Sarah Akhtar, Andreea Geamanu, Nadia Saadat, **Arvind Goja**, Smiti Gupta. ProAlgaZyme and its Subfractions improve Hamster plasma lipid profile via down regulation of CETP gene expression." National Conference of Undergraduate Research 2010, Ithaca, NY
13. Andreea Geamanu, **Arvind Goja**, Shaistha Zaheeruddin, Smiti Gupta. Efficacy of curcumin in lung cancer hamster model. EB 2009, New Orleans, LA
14. **Arvind Goja**, Shaistha Zaheeruddin, Andreea Mateescu, Nadia Sadaat, Smiti V. Gupta. Effects of curcumin on Lung cancer; Metabolomic Approach. EB 2009, New Orleans, LA
15. 'Urinary metabolomic profile: biomarkers for hypercholesterolemia induced Alzheimer's disease?' (2006), Metabolomics Society held at Harvard Medical School (Boston) **Arvind Goja** and Smiti Gupta
16. 'Urinary metabolomic profile: biomarkers for hypercholesterolemia induced Alzheimer's disease?'

' This presentation involved more recent and in-depth research conducted by us since 2006 – (2007) Metabolomic Society held at Imperial College (UK): **Arvind Goja** and Smiti Gupta

(g) Conferences/Workshops attended:

1. Completed training in “ERP Training for Academic modules” organized at DYPBII, Pune India
2. Member of Organizing Committee for National Symposium on Recent Advances in Modern Biology and Biotechnology 2017, 2018 and 2019” (RAMBB) organized by DYPBII, Pune, India
3. Attended workshop for “Research Based Pedagogical Tools Workshop” organized by IISER Pune in collaboration with Sheffield Hallam University as a part of Newton-Bhabha Fund.

INVITED TALK

- **Invitation as a speaker/facilitator** for Intensive Metabolomics and Multivariate Data Analysis Workshop by Universiti Putra Malaysia, (14th – 16th August 2018)
- Judge for 5th Annual Graduate Exhibition 2014, Wayne State University, Detroit, MI.
- Course Faculty (Trainer/Lecturer) for the Workshop entitled: Nutrition, Metabolomics and Bioinformatics at Universiti Kebangsaan, Malaysia from 13th to 23rd May 2013.
- Invited Global Fellow Speaker at **Third International Food and Nutrition Conference (IFNC)** Tuskegee, Alabama, 2011