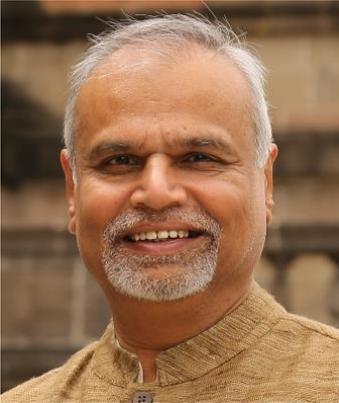


## *Curriculum Vitae*\*

### **Professor Bhushan Patwardhan, PhD, FNASc, FNAMS**



**National Research Professor-AYUSH, former Vice Chairman, University Grants Commission and Chairman Indian Council of Social Science Research. Member of several academic research and policy committees such as NITI Aayog, Planning Commission, Lancet Citizen's Commission, National Board of Examination, United Nations, World Health Organization Geneva. Fellow, National Academy of Sciences and National Academy of Medical Sciences (India). Founder Editor-in-Chief, Journal of Ayurveda and Integrative Medicine published by Elsevier. Recipient of several orations, awards, holds 8 Indian, 2 US Patents, 175+ scientific publications and 9800+ citations.**

**Office Address:** Distinguished Professor  
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INDIA

**Email:** [bhushan@unipune.ac.in](mailto:bhushan@unipune.ac.in) and [bpawardhan@gmail.com](mailto:bpawardhan@gmail.com)

**Websites:** [http://unipune.ac.in/snc/school\\_of\\_health\\_sciences/default.htm](http://unipune.ac.in/snc/school_of_health_sciences/default.htm)  
<https://vidwan.inflibnet.ac.in/profile/94246>  
<https://orcid.org/0000-0003-3918-2609>  
<https://www.journals.elsevier.com/journal-of-ayurveda-and-integrative-medicine/>

Google Scholar: 175+ publications, 9800+ citations, *h*-index 49, *i10*-index 115.  
<https://scholar.google.com/citations?user=egxm6oIAAAAJ&hl=en>

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\* Information in this CV is only indicative and not comprehensive. This document is prepared for academic purpose and should not be used for statutory or any other purposes

## Summary

Professor Bhushan Patwardhan has over 40 year experience in higher education, scientific research and institutional governance. He is one of the top cited biomedical scientists who is Fellow of National Academy of Sciences and National Academy of Medical Sciences India. Until March 2021, he was Vice Chairman, University Grants Commission, and Chairman additional charge Indian Council of Social Science Research, Government of India. Currently, he is Chairman of the Interdisciplinary R&D Taskforce on Covid-19, and member, advisory committee constituted by the Ministry of AYUSH. He is on the taskforce for the proposed WHO Global Center for Traditional Medicine, member National Board of Examination and Lancet Citizen's Commission. Earlier, he was Professor and Director at the Interdisciplinary School of Health Sciences, and the Center for Complementary and Integrative Health, Savitribai Phule Pune University. He has worked as academic head of Manipal Education Group; Director, Institute of Ayurveda and Integrative Medicine, Bengaluru; Vice Chancellor, Deemed University in Pune, and visiting Professor at Indian Institute of Advanced Studies, Shimla. He has worked on Boards of several Universities and member of important national committees of Ministry of AYUSH, Ministry of Education, University Grants Commission, Council for Scientific & Industrial Research, Department of Science & Technology, Department of Biotechnology, Indian Council of Medical Research Central and Council for Research in Ayurvedic Sciences. He has worked on several policy making committees and Taskforces of National Knowledge Commission, Planning Commission, NITI Aayog, Lancet Citizen's Commission on Reimagining Indian Health System. He was temporary consultant to the WHO Geneva. He has made original contributions in evidence-based Ayurveda especially in Ayurvedic biology, ethnopharmacology, natural product drug development and integrative approaches to improve public health system. His pioneering contributions on novel concepts such as Therapeutic Adjuvants, AyuSoft™, AyuGenomics™, Reverse Pharmacology, Network Pharmacology are widely recognized. He is recipient of many orations and awards including Sardar Vallabh Bhai Patel Award 2021, Dr. R.P.Devadas Oration 2020, V K Joag Best Teacher Award 2017, Waldemar Haffkine Oration 2014, Harihar Mukherjee Award 2015, Gopaldas Parikh Award 2015, Sir Ram Nath Chopra Oration 2013, Dr P.K. Devi Oration 2011, Dr C. Dwarkanath Oration 2008 just to mention a few. He has extensively travelled worldwide and delivered invited lectures at many national and international platforms including the United Nations, World Health Organization, American Chemical Society, National Institutes of Health USA, University of California, Pennsylvania, Penn State, Illinois, South Florida, Johns Hopkins, George Washington University, Indian National Science Academy, Indian Pharmacological Society, Indian Pharmaceutical Congress, among many others. He has authored many books and chapters with reputed publishers including Elsevier, Academic Press, Wiley, Pharma Press, InTech and Research Signpost. His recent scholarly books 'Integrative Approaches for Health' and 'Innovative Approaches to Drug Discovery' both published by Academic Press Elsevier have received excellent reviews. He is founder Editor-in-Chief of Journal of Ayurveda and Integrative Medicine published by Elsevier. He is on Editorial Boards of many other reputed Journals including Journal of Alternative and Complementary Medicine, Evidence based Complementary and Alternative Medicine. He remains the most cited author in the area of evidence-based Ayurveda. He has contributed significantly to create awareness regarding predatory publishing and was Chairman of the Consortium for Academic Research Ethics known as UGC-CARE. His World View article on predatory journals published in NATURE has been widely appreciated. It is noteworthy that his 25 articles have been cited more than 100 times. He has received several research grants, has guided 20 PhD students and holds 8 Indian Patents, 2 US Patents with over 9800 citations.

## Education & Honors

Year	Degree	Field of Study	Institution
2016	F.N.A.Sc.	Elected Fellow	National Academy of Sciences (India)
2013	F.N.A.M.S.	Elected Fellow	National Academy of Medical Sciences (India)
2008	EGMP	Executive General Management Program	Indian Institute of Management, Bangalore
2000	F.M.A.S.	Fellowship in recognition of original scientific research	Maharashtra Academy of Sciences, Mumbai
1985	Ph.D.	Biochemistry Thesis: Chemical and Biological Studies on <i>Semecarpus anacardium</i> under supervision of Professor Samuel David	Department of Pharmacology, Haffkine Institute Mumbai and Department of Botany University of Pune
1981	M.Sc. with First Class	Biochemistry under supervision of Professor John Barnabas	Postgraduate School for Biological Studies University of Pune
1979	B.Sc. with First Class	Chemistry Major Botany and Geology Minor	Fergusson College, University of Pune
1975	S.S.C with First Class	Matriculation	Nutan Marathi Vidyalaya High School, Pune

## Postdoctoral Training

Year	Title	Specialty	Institution
1992-1994	Research Scientist	Pharmaceutical R&D	BioVed Pharmaceuticals Inc. USA
1990-1992	LiTaka Research Scientist	Pharmaceutical R&D	LiTaka Pharmaceuticals Ltd, Pune
1986-1989	Manager Research & Development	Pharmaceutical R&D	Eisen Pharmaceuticals Pvt Ltd, Pune

## Awards and Prizes (Indicative list)

<b>Year</b>	<b>Name</b>	<b>Organization</b>	<b>Recognition For</b>
2021	Sardar Vallabh Bhai Patel Award	National Board of Examination Ministry of Health & Family Welfare, New Delhi	Distinguished Service to Nation
2020	Dr. Rajammal P Devadas Oration	Avinashilingam University, Coimbatore	Excellence in Health Sciences Research
2017	Prin V K Joag Memorial Award for Best Teacher	Savitribai Phule Pune University	Excellence in Teaching
2015	Harihar Mukerjee Award	Society for Ethnopharmacology, Kolkata	In recognition of research in the field of ethnopharmacology
2015	IASTAM - Gopaldas Parikh Award	Indian Association for Asian Traditional Medicine	In recognition of contributions to herbal drug research and development
2014	Visiting Professorship	Indian Institute of Advance Studies, Shimla	For writing scholarly book on Health
2014	Dr. Waldemar Mordecai Haffkine Oration Award	Haffkine Institute, Parel, Mumbai	In recognition of significant contributions in biomedical research
2013	Conferred Fellowship	National Academy of Medical Sciences, New Delhi	In recognition of outstanding research in biomedical sciences
2013	Sir Ram Nath Chopra Oration	Indian Pharmacological Society	In recognition of outstanding research in medicinal plants
2013	Dr P.M. Mehta Oration	Gujarat Ayurved University, Jamnagar	In recognition of scientific contributions
2013	University Foundation Oration	KLE University Belgaum	In recognition of scientific and integrative medicine contributions

2012	Excellence in Ayurveda Research Award	St Laurent Institute, George Washington University	In recognition of scientific contributions
2011	Nutra India Award	CFTRI (CSIR), Nutraceutical Sumit Mumbai	for outstanding contributions in nutraceutical research
2011	Dr P K Devi Oration Award	Kasturba Health Society	In recognition of scientific contributions
2011	Dewang Mehta Award	Management Association	For Excellence in Education
2009	Conferred Fellowship	Institute Indian of Medicine	In recognition of research in Ayurveda
2008	Dr C. Dwarkanath Oration	Dwarkanath Trust Bangalore	In recognition of research on Ayurveda
2000	Conferred Fellowship	Maharashtra Academy of Sciences	In recognition of scientific research
1993	Conferred Fellowship	International Council of Ayurveda	In recognition of research in Ayurveda
1992	Li Taka Research Scientist Award	University of Poona	Pharmaceutical Research in Industry
1992	Parkhe Award	Maratha Chamber of Commerce and Industries	Industrial Merit Excellence,
1983	Best Research Award	University of Pune	University Annual Research Seminar competition
1980	Prof Arnikar Award	University of Pune	for Best Presentation among the graduate students

## Academic Appointments

<b>Year</b>	<b>Academic Title</b>	<b>Academic Department</b>	<b>Institution</b>
2021/03 - Present	National Research Professor	AYUSH	Ministry of AYUSH
2021/03 - Present	Distinguished Professor	Interdisciplinary School of Health Sciences	Savitribai Phule Pune University
2020/02 - 2021/03	Chairman	Indian Council of Social Science Research	ICSSR New Delhi
2018/08 - 2021/03	Vice Chairman	University Grants Commission	UGC New Delhi
06/2016 - 08/2018	Director	Center for Complementary & Integrative Health	Savitribai Phule Pune University
2014/01-31/07	Visiting Professor	Institute	Indian Institute of Advanced Studies, Shimla
2014 – 2016	Honorary Director	Research	International Longevity Center, Pune
2011/04 – 2016/01	Honorary Research Advisor	Research and Development	Institute of Ayurveda & Integrative Medicine Bangalore
2011/03 – 2012/08	Vice Chancellor	Symbiosis International University	Symbiosis Society Pune
2010/08 - 2011/02	Director	Institute of Ayurveda and Integrative Medicine	FRLHT Bangalore
2006 – 2009	Academic Advisor	Directorate of Distance Education	Sikkim Manipal University
2005 – 2006	Sabbatical Fellowship	Academics	Manipal Academy of Higher Education
2005 – 2006	Hon Director	Center	International Longevity Center, Pune
1996 /04 – 2019/03	Professor	Interdisciplinary School of Health Sciences	University of Pune

1994 /04 – 1996/03	Associate Professor	Interdisciplinary School of Health Sciences	University of Pune
1996 – 2019	Graduate and Doctoral Research Guide	Faculty of Sciences Health Sciences Faculty of Pharmaceutical Sciences Biomedical Sciences	University of Pune Bharati Vidyapeeth University, Pune
1992 – 1993	Hon. Joint Director	Pharmacognosy Research	Indian Drugs Research Laboratory, Pune
1989 – 1993	Chairman	Interdisciplinary School of Ayurvedic Medicine	University of Pune

## Other Professional Positions (Indicative list)

Year	Position	Institution
2020/10- Present	The Lancet Citizens' Commission on Reimagining India's Health System	The Lancet
2020/07 – 2020/12	Co Chair Social Protection Group UN Research Roadmap for the COVID-19 Recovery	United Nations
2019 – 2021/03	Chairman, Consortium for Academic Research Ethics (CARE)	University Grants Commission
2020 – 2021/03	Chairman, Scheme for Trans-disciplinary Research for India's Developing Economy (STRIDE)	University Grants Commission
2013 / 11 – 2016	Chairman, Academic Planning and Development Committee	National Institute of Pharmaceutical Education and Research (NIPER), Mohali
2013	Project Advisor	Canara Bank School of Management Sciences, Bangalore University
2012	Honorary Research Advisor	Institute for Transdisciplinary Research in Health Science & Technology (Karnataka State Private University), Bangalore
2012 – 2016	Honorary Scientific Advisor	Centaur Pharmaceuticals Ltd
2008 – 2016	Member Board of Trustees	Center for Developmental Studies and Activities, Pune
2008 – 2010	Member Board of Management	DY Patil University Pune
2008 – 2010	Member Academic Council	Bharati Vidyapeeth University
2004 – 2005	Hon Director and Member Governing Board	International Longevity Center, Pune

2003 – 2006	Member Board of Management of three Deemed Universities as UGC Nominee	Nomination by the University Grants Commission
1998 -2004	Member Board of International Office Agenda 21	Pune and Pimpri Chinchawad Municipal Corporations and City of Bremen
1989 – 2016	Member Board of Trustees	Science & Technology Park Society University of Pune
1996 – 2001	Scientific Advisor	Bio Ved Pharmaceuticals Inc, San Jose, US
1988 – 2016	Member Board of Trustees and Governing Board	Indian Drug Research Association, Pune

## Leadership Positions (Indicative list)

Year	Position	Institution
2020/04 Present	Chairman, Interdisciplinary AYUSH R&D Task Force on COVID-19	Ministry of AYUSH, Government of India, New Delhi
2019 – 2021/03	Vice Chairman, Committee on Integrative Health	NITI Aayog, New Delhi
2019 – 2021/03	Chairman, Governing Board	Consortium for Educational Communication, New Delhi
2011/04 – 2012/09	Vice Chancellor	Deemed University in Pune
2007 2011	Convener	Vision Group, EDGE Forum (a consortium of progressive Indian Universities)
1996 – 2006/05	Director	Interdisciplinary School of Health Sciences, University of Pune
2006/06 - 2009/01	Chief of Academics	Manipal Universal Learning, Bangalore, India
2005	Advisor	Commission on Intellectual Property Innovation and Public Health, World Health Organization, Geneva
2006/03 – 06	Convener	Vision 2020 Committee to develop a long term perspective development plan for University of Pune

2002 – 2004	Convener	Promotion of Indian Higher Education Abroad Committee, University Grants Commission, Government of India
2000 – 2006	Member Management Council	University of Pune
1996 – 2003	Advisor and Faculty, Penn in India Program	University of Pennsylvania
1989 – 2006	Member Senate Academic Council (tenured terms)	University of Pune
1989 – 1994	Member Executive Council	University of Pune

## **Committee Service (Indicative list)**

<b>Year</b>	<b>Name of the Committee</b>	<b>Institution</b>
2021	Member, Advisory Group, Ayurveda Academic Chair Program	National Institute of Complementary Medicine, Western Sydney University, Australia
2021	Member, Joint Task Force, Global Centre for Traditional Medicine	World Health Organization and Ministry of AYUSH
2020	Member, National Board of Examination - Medical	NBE (Medical), New Delhi
2019	Member, SWAYAM Advisory Board	Ministry of Human Resource Development
2017	Member, UGC Standing Committee for Notification of Journals	University Grants Commission
2017	Chairman, Academic Journals Expert Committee,	Savitribai Phule Pune University
2016	Member, Research Review Committee, Central Council for Research in Ayurvedic Sciences (CCRAS),	Ministry of AYUSH, Government of India
2016	Member, Inter-Departmental Committee for identifying viable new systems of medicine	Ministry of Health and Family Welfare, Department of Health Research, Government of India
2016	Member, Committee for National Policy on AYUSH	Ministry of AYUSH, Government of India

2016	Member, Committee to Review Functioning of Research Councils	Ministry of AYUSH, Government of India
2016	Member, Board of Studies, Pharmaceutical Sciences	All India Council for Technical Education, Government of India
2016	Member, Research Policy Committee	Bharati Vidyapeeth Deemed University
2016	Chairman, Board of Studies in Basic Medical Sciences and Health Sciences	Savitribai Phule Pune University
2015	Member, Research Advisory Council	Manipal University, Manipal
2015	Member, Task Force	Ministry of AYUSH, Government of India
2015	Expert Member, ICMR-DRDO Committee	Indian Council of Medical Research, Government of India
2015	Chairman, Committee for 'Guidelines for Research Publications'	Savitribai Phule Pune University
2014	Vice Chairman, Expert Group on Translational Research for Products and Processes from Medicinal and Aromatic Plants	Department of Biotechnology, Government of India
2014	Chairman, <i>Ad-hoc</i> Board of Studies, Health Sciences,	University of Pune
2013	Chairman, <i>Ad-hoc</i> Board of Studies in Genetics, Immunology, Biochemistry and Nutrition Member Academic Council	Maharashtra University of Health Sciences, Nashik
2013	Expert Member, Working Group on Nutraceuticals,	Food Safety and Standards Authority of India, Government of India, New Delhi
2013	Member Institutional Review Committee	Tata Institute of Social Sciences, A deemed University, Mumbai
2013	Member, Ayurveda Advisory Committee	Government of Madhya Pradesh (M.P.) Bhopal, India
2013	Member Health Center Advisory Committee	University of Pune
2013	Member, Scientific Advisory Committee	Nirma University, Ahmedabad

2012	Member Advisory Board	Vanarai Trust Pune – an NGO dedicated to nature and environment conservation
2011	Member Research Council, National Botanical Research Institute, Lucknow	Council for Scientific and Industrial Research
2011	Chairman, Mission Group on Traditional Knowledge	Government of Karnataka, Bangalore
2010	Member Research Advisory Committee, Regional Medical research Center Belgaum	Indian Council of Medical Research
2010	Member Inter-sectoral Innovation Council	Department of AYUSH Government of India
2009	Chairman Research Monitoring Committee of Center of Relevance and Excellence in Pharmacogenomics, Manipal University	Technology Information Forecasting and Assessment Council, Government of India
2009	Member International Council Research Committee AYUSH	Government of India
2010/08	Leader and Member of Indian Delegation Indo-South Africa Bilateral Cooperation in Science & Technology	Medical Research Council of South Africa and University of Western Cape, University of Pretoria, Durban University, University of KwaZulu Natal, South Africa
2009	Chairman, Endogenous Development Program with cooperation of Universities from Africa, Latin America and India	Capacity and Theory Building for Universities and Research Centres for Endogenous Development (CAPTURED) Program, Dutch Ministry for Development Cooperation, The Netherlands.
2006	Member Research Advisory Committee	Jana Prabodhini Research Institute Pune
2008	Member Subcommittee, Karnataka Knowledge Commission	Government of Karnataka
2002	Member, Academic Advisory Board, National Institute of Pharmaceutical Education and Research	Government of India
2006	Chairman, Working group on Traditional Knowledge	National Knowledge Commission, Government of India
2005	Member Task force 11 <sup>th</sup> Five Year Plan	Planning Commission, Government of India

2002	Co Chair, Biotechnology Committee,	Maratha Chamber of Commerce and Industries
2002	Chairman Steering Committee, New Millennium Indian Technology Leadership Initiative, Arthritis Herbal Drug Development Group	Council for Scientific and Industrial Research
2000	Member Task force for Maharashtra Biotechnology Policy	Government of Maharashtra
1999	Member Organizing Committee, Local Organizing Secretary and Chief coordinator	87 <sup>th</sup> Indian Science Congress, Pune

## Convocation Addresses

<b>Date</b>	<b>University</b>	<b>Theme</b>
06 Feb 2020	56 <sup>th</sup> Convocation, Shivaji University Kolhapur	Reimagining Indian Higher Education
10 Jan 2020	1 <sup>st</sup> Convocation, Vishwakarma University Pune	Towards Future Ready Education
05 Dec 2019	37 <sup>th</sup> Convocation, Sampurnanand Sanskrit University, Varanasi	Contemporary Relevance of Sanskrit in Higher Education
08 Nov 2019	6 <sup>th</sup> Convocation, Manipal University Jaipur	Disruptions in Higher Education for Industry 4.0
23 Oct 2019	4 <sup>th</sup> Convocation, M.S. Ramaiah University of Applied Sciences, Bengaluru	Integrative Health System for India
14 Sep 2019	59 <sup>th</sup> Convocation, Dr Babasaheb Ambedkar Marathwada University Aurangabad	Quality, Innovation and Inclusion in Education
06 Sep 2019	2 <sup>nd</sup> Convocation Indira Gandhi National Center for Arts, New Delhi	Value of Arts and Humanities in Education
31 Jul 2019	11 <sup>th</sup> Convocation, MGM Institute of Health Sciences (Deemed to be University), Navi Mumbai	Emerging Directions in Health Science Education
13 Apr 2019	10 <sup>th</sup> Convocation, Dr. D.Y. Patil Vidyapeeth (Deemed to be University) Pune	Universal Health Coverage: Integrative Model for India
08 Mar 2019	7 <sup>th</sup> Convocation, D.Y. Patil Education Society (Deemed to be University) Kolhapur	Moving Towards Integrative Health System

## **Invited Lectures** (Indicative list)

<b>Year</b>	<b>Title of Presentation / Organizer /Location</b>
2021 June 8	Invited speaker, Transforming Ayurveda for the Future Scopes and Challenges, Shatapoornima 100th Birth Day program of Padmabhooshan Dr. P K Warriar
2021 May 25	Invited speaker, Yoga: Scientific Research and Education Webinar by Heartfulness Foundation
2021 May 14	Invited speaker, AyurTalk, World Ayurveda Foundation Webinar Series
2021 May 1	Invited speaker, Transdisciplinary Research Approach for Evidence based Ayurveda, National Ayurveda Medical Association (NAMA) USA Annual Conference “Ayurveda: Evidence Based Integrative Medicine”
2021 Apr 29	Valedictory lecture, Integrative Health & Medicine: A Chimeric Notion Or A New Normal? 47 <sup>th</sup> Annual Conference of Research Society, B.J. Government Medical College and Sassoon General Hospital
2021 Apr 9	Invited speaker, Higher Education in Past Covid Era, Webinar 22nd Annual National Conference of Association of Indian College Principals [AICP], MIT World Peace University, Pune
2021 Mar 30	Invited speaker, Ashwagandha: Ayurveda’s flagship herb goes mainstream, Nutraingredients Webinar, USA
2021 Mar 25	Invited speaker, Education Beyond Face-to-Face Mode: Opportunities and Challenges, Maharaja Sayajirao University Vadodara
2021 Mar 18	Invited speaker, International e-Conference – 2021 “Covid-19: Challenges and Opportunities in Pharmaceutical Research” Organized by Institute of Pharmacy, Nirma University, and Indrashil University, Ahmedabad
2021 Mar 18	Invited speaker, Governance of Higher Education and NEP 2020, Webinar by National University Education Planning and Administration, New Delhi
2021 Feb 26	Valedictory address at the 48 <sup>th</sup> National Progressive Schools’ Conference, Webinar, New Delhi
2021 Feb 26	Invited lecture, National Webinar on NEP and Indian Ethos National Webinar on NEP and Indian Ethos, Kaveri Education Trust, Pune
2021 Feb 15	Invited speaker, 7th International Congress in association with Society for Ethnopharmacology, Jamia Hamdard University, New Delhi.

- 2021  
Jan 28 Invited Oration, Emerging Directions in Health Sciences Education Eighteenth Dr. Rajammal P. Devadas Annual Oration, Avinashilingam University, Coimbatore
- 2020  
Jan 15 Inaugural lecture, Ayurvedic Biology Program, Jawaharlal Nehru University, New Delhi
- 2021  
Jan 4 Invited speaker, Biological Sciences and Innovative Approaches to Drug Discovery, Webinar by Ramnarain Ruia College Mumbai
- 2021  
Jan 4 AYUSH - Nextgen Business, in the Post Covid-19 Era, Pathy-based System to People-centered Holistic Healthcare. IIM Ahmedabad Alumni Network Webinar
- 2020  
Dec 22 Invited speaker, New Frontiers in Integrative Health and Drug Discovery, Face To Face With New Frontiers In Science, India International Science Festival, Webinar
- 2020  
Dec 10 Invited speaker, Assessing the role of teachers in NEP 2020, Webinar by National University Education Planning and Administration, New Delhi
- 2020  
Nov 21 Invited speaker, Post Covid-19 Era & Future for Health and Humanity: Impact on Humans and Societies, Webinar by Boston Center of Excellence for Health and Human Development, USA
- 2020  
Nov 19 Invited speaker, Integrative Medicine in COVID-19: Ashwagandha as Immunomodulator and Adjuvant Webinar on COVID-19 - Shiraz University of Medical Sciences, Iran
- 2020  
Oct 27 Invited Speaker, Trans NCI-NIH Virtual Conference on International Perspectives on Integrative Medicine for Cancer Prevention and Cancer Patient Management
- 2020  
Oct Invited participant, Inter Academy Partnership, Combatting Predatory Academic Journals and Conferences
- 2020  
Oct 15 Invited speaker, Confederation of Indian Industries, International Conference and Exposition, On Emerging Opportunities for Ayurveda during Pandemic, “Ayurveda for Immunity” Webinar
- 2020  
Oct 14 Invited Speaker for IAS Batch 2020, Transition from Pathy-based System to People-centered Holistic Healthcare? Lal Bahadur Sastry National Academy of Administration (LBSNAA) Mussoorie
- 2020  
Oct 10 Invited speaker, Emerging Directions in Health Sciences Education, Datta Meghe Institute of Medical Sciences, Wardha.
- 2020  
Oct 9 Invited speaker, Research Methodology and Manuscript Writing, Webinar, Rashtriya Ayurveda Vidyapeeth, New Delhi
- 2020 Invited speaker, Deccan College Bicentenary Celebration – 199<sup>th</sup> Foundation Day

Oct 6

2020  
Sept 25

2020  
Sept 21

2020  
Sept 11

2020  
Aug 26

2020  
Aug 25

2020  
Aug 7

2020  
June 17

2020  
Feb 6

2020  
Jan 31

2020  
Jan 10

2020  
Jan 4

2020  
Jan 2

2019  
Dec 17

2019  
Dec 5

Invited speaker, Webinar on COVID-19 – Emerging strategies and research in Ayurveda, Council for Research in Ayurveda USA.

Invited speaker, Panel Discussion on Making Mentoring Relevant: NEP 2020 Perspective, National Institute of Technical Teacher Training and Research

Invited speaker, NAAC Bangalore, Webinar on Academic Integrity and Research Ethics

Invited speaker, Agriculture Universities Vice Chancellor Conclave, Indian Council of Agricultural Research, New Delhi

Invited speaker, Improving Quality & Relevance of Doctoral Research, ITM University Webinar.

Invited Speaker, Transformational Reforms in Higher Education, Catalysing Quality Research, UGC Conclave, Webinar, New Delhi.

Invited Lecture, Education and Research Reforms for Integrative Health, PGIMER, Chandigarh.

Convocation Address, Re-discovering Indian Higher Education: Shivaji University, Kolhapur

Valedictory Lecture, Promoting Excellence in Research, LEAP Program at TISS, Mumbai.

First Convocation Address, Vishwakarma University Pune

Vidyasagar Late Principal K.M Kundnani Lecture, Re-discovering Indian Education System: How learning from glorious past can help pave road towards a bright future, HSNC University, K.C. College of Arts and Commerce, Mumbai

Invited Speaker, Health System Perspectives: Biomedical, Ethical and Socioeconomic Faculty Training Program for Medical Officers – National Institute of Health and Family Welfare, New Delhi

Invited Lecture, UGC Quality Mandate and New Initiative. Annual Conference, INSA, NIO, Goa

Invited Lecture, Integrative Approaches for Health and Innovative Approaches to Drug Discovery. IUPHAR-2019, NIN Hyderabad, December 7, 2019

- 2019  
Nov 22 Invited Lecture, 'Prioritising Planet, People and Profits: Health and Environment', Gandhi and Technology: Perspectives and Approaches, Symposium, ASTU, Guwahati
- 2019  
Oct 18 Invited Lecture, 'The New Pharmacognosy: Time to Refresh and Accelerate' International Conference on 'Bimolecular and Biotechnological Aspects of Medicinal Plants', L.M. College of Pharmacy, Ahmedabad
- 2019  
Oct 3 Indian Delegate, International conference on 'Social and Cultural Nexus of Science and Technology Development' National Science Foundation (NSF), Ministry of Science, Technology and Research, Sri Lanka AND Co-organizer: ICSSR, India
- 2019  
Aug 15 Invited Lecture, 'Research Integrity & Publication Ethics: Indian Scenario', Indian Institute of Advance Study, Shimla.
- 2019  
Aug 9 3<sup>rd</sup> Dr. S. P. Thyagarajan Endowment Oration, 'Innovative approaches to Drug Discovery" Sri Ramchandra University, Chennai
- 2019  
June 3 Invited Plenary Lecture 'Research integrity and publication ethics: Indian Scenario' at 6<sup>th</sup> World Conference on Research Integrity jointly organized by Royal Melbourne Institute of Technology (RMIT), Australia and University of Hong Kong.
- 2019  
May 29 Invited Lecture, 'Promotion of Research in the Universities of Bihar' Sensitization Workshop under aegis of Raj Bhavan Bihar
- 2019  
May 13 Invited Lecture, 'Health Care System: Biomedical, Ethical and Socioeconomic Perspectives', ICSSR Golden Jubilee 2019 New Delhi
- 2019  
Apr 17 Invited Participant, International invitational summit about predatory journals, Center for Journalology, The Ottawa Hospital, Canada.
- 2019  
Mar 27 Invited Lecture, Research Ethics and Scientific Writing, Banaras Hindu University, Varanasi.
- 2018  
Dec 14 Invited Lecture, Overview of Ayurveda and Cancer: Evidence and Practice Cancer Conclave at the 8<sup>th</sup> World Ayurveda Congress, Ahmedabad
- 2018  
Nov 4 Invited Lecture, Innovation and Creativity. National Seminar on Entrepreneurship and Business Development in Ayurveda, Ministry of AYUSH, Dr Ambedkar Bhavan, New Delhi.
- 2018  
Oct 26 Invited Lecture, 'Tradition and science of food as medicine', 19<sup>th</sup> IUFOST World Congress of Food Science & Technology, Mumbai

- 2018  
Sept 7  
Invited Lecture, 'Integrative Approach of Ayurveda to Combat Antimicrobial Resistance' Newton Bhabha Fund Researcher Links Workshop  
Jadavpur University September 4-7, 2018
- 2018  
Sept 4  
Invited Lecture, Environmental Pathways to Health, FEED Academic Classroom,  
Pune
- 2018  
Aug 30  
Inaugural Lecture, Continuing Education Programme (CEP) sponsored by  
Pharmacy council of India on "Emerging Trends in Pharma Sciences" NMIMS  
College of Pharmacy Shirpur.
- 2018  
July 17  
Invited Lecture, Strengthening AYUSH Research Becoming Leaders - Not  
Followers. National Conference - Heads of AYUSH National Institutes, AIIA,  
New Delhi
- 2018  
June 22  
Plenary Lecture, 3rd International Conference on Yoga & Ayurveda, Joseph B.  
Martin Conference Center, Harvard Medical School, Boston, U.S.A.
- 2018  
Apr 28  
Invited Lecture, Integrative Approaches For Health: Ayurveda, Yoga and  
Biomedicine, Mount Madonna Institute-College of Ayurveda, California, USA
- 2018  
Feb 15  
Invited Lecture, Network Ethno-Pharmacology: New Approach for Drug  
Discovery, Development and Repurposing. 50th Annual Conference of the Indian  
Pharmacological Society "IPSCON- 2017" Mumbai.
- 2018  
Jan 23  
Invited Lecture, 4th Nirma Institute of Pharmacy International Conference  
NIPiCON – 2018. "Innovation in Pharmaceutical Research by Interdisciplinary  
Approach"
- 2018  
Jan 5  
Invited Lecture, 'Integrative Oncology: Role of Ayurvedic Rasayana as Adjuvants'.  
22<sup>nd</sup> INCOFYRA, S-VYASA, Bengaluru
- 2017  
Nov 9  
Plenary Lecture, 1st International AYUSH Conference, World Trade Center,  
Dubai, Vijana Bharati Science India Forum
- 2017  
Nov 18  
Inaugural Lecture, Innovation-2017 for Pharmacy Discipline, Sinhgad College of  
Pharmacy, Pune
- 2017  
Oct 17  
Lead Lecture, Seminar on "Quality Control in Clinical Biochemistry &  
Microbiology" Association of Clinical Biochemists and Microbiologists, Pune
- 2017  
Oct 1-2  
Plenary Lecture, Indo-Hungarian Symposium organized jointly by University of  
Debrecen, Hungary and Ministry of AYUSH, Government of India.
- 2017  
Sept 25  
Lead lecture, Basics of Biomedical Research for Research Officers of Central  
Council for Research in Ayurvedic Sciences, Northern Regional Workshop at  
CCRAS HQ, New Delhi.

- 2017  
Sept 17 National Seminar on “Quality Control in Clinical Biochemistry & Microbiology”  
Association of Clinical Biochemists and Microbiologists, Pune
- 2017  
Sept 9 Plenary speaker, National Symposium on “Ashwagandha” Society For  
Ethnopharmacology, Jadavpur University, Kolkata.
- 2017  
Sept 5 Lead lecture, Induction to research methodology for Research Officers of Central  
Council for Research in Ayurvedic Sciences, Western Regional Workshop at  
Nagpur
- 2017  
Aug 6 Invited panelist, IXth ICTAM - International Congress on Traditional Asian  
Medicines Conference at Christian Albert University at Kiel, Germany
- 2017  
July 29 Invited Faculty, National Workshop on Research Methodology, Deccan College  
Deemed University, Pune.
- 2017  
May 5 Invited Plenary, National Seminar on “Molecular Markers in Herbal Drug  
Discovery”, VNS Group of Institutions, Faculty of Pharmacy, May 5 - 6 , 2017  
Bhopal, India
- 2017  
May 2-3 Invited lecture, Status of Ayurveda Research In India, Indo-Swiss Ayurveda  
Foundation, Bern, Switzerland
- 2017  
April 1 Invited speaker, Integrative Approaches for Future: Ayurveda, Genomics and  
Epigenetics, International AyurVeda Congress, London
- 2017  
Mar 17 Invited lecture, Traditional Medicine and IPR, Rashtriya Ayurved Vidyapeeth  
CME organized by Central Council of Tibetan Medicine, Dharamshala
- 2017  
Jan 6 Invited Lecture, Yoga and Diabetes, International conference organized by  
CCRYN, New Delhi.
- 2016  
Dec 19 Inaugural Lecture, Emerging Trends in Pharmacological research, AICTE Quality  
Improvement Program, Poona College of Pharmacy, Pune
- 2016  
Nov 12 Inaugural Lecture, Regulatory aspects of traditional medicine, Dr D Y Patil  
College of Pharmacy, Akurdi
- 2016  
Oct 14 Inaugural Lecture, Association of Pharmacy Teachers of India (APTI) Annual  
Conference, Manipal University, Manipal
- 2016  
Oct 1 Invited Plenary, Food and Health, Navadanya Bhoomi Conference, India  
International Center, New Delhi
- 2016  
Sept 29 Invited Plenary, “Drug and Formulation Discovery: Emerging Opportunities from  
Phytopharmaceuticals” Drug Discovery India 2016” Conference, Bengaluru,

- 2016  
Sept 16 Invited Plenary ‘From Omics To Om: Integration For The Future’, 3rd International Congress on Ayurveda, Milan Italy.
- 2016  
Sept 10 BRICS Wellness Summit, RIS, NITI Ayog, and Ministry of AYUSH, Bengaluru
- 2016  
Aug 11 Evidence based Ayurveda for reducing threats to health. Indo-US symposium in collaboration with US Defence Threat Reduction Agency. International Center, SPPU.
- 2016  
July 21 Inaugural address ‘Perspectives and Prospective of Traditional Medicine: Phytopharmaceuticals and Formulation Development’ at Phytocongress 2016, SASTRA UNIVERSITY, Thunjaur
- 2016  
June 21 Invited Plenary Lecture ‘Scientific benefits of Yoga’ at National Center for Cell Science, International Yoga Day, 2016
- 2016  
May 14 Invited as lead resource person speaker at Community Workshop on Integrative Approaches for Health, University of South Florida, Tampa, USA
- 2016  
May 11 Special guest lecture on natural product drug discovery and development, Department of Pharmacy, University of South Florida, Tampa, USA
- 2016  
May 11 Keynote speaker at community seminar ‘Integrative approaches to wellness and longevity – Ayurveda and Yoga’, Sun City Center, Tampa, Florida, USA
- 2016  
May 3 Invited to organize Mini Symposium and lead speaker ‘Evidence-based Traditional Medicine and Healthcare System in India - Special Reference to Cancer’ at NIH NCI, Bethesda, USA
- 2016  
Apr 13 Invited Keynote Lecture, International Conference on AYUSH at Mauritius, Ministry of AYUSH and Indian High Commission, Mauritius
- 2016  
Apr 7 Invited Plenary Lecture, National Workshop on Drug Discovery and Development from Plants, ICMR and Arya Vaidya Pharmacy, Kottakal
- 2016  
Apr 4 Invited Plenary Lecture at Manipal Research Colloquium, Manipal University, Manipal
- 2016  
Feb 25 Invited Plenary Lecture, Seminar at ICMR Regional Medical Research Center, Belagavi
- 2016  
Feb 13 Invited for Annual Day Commemoration Lecture, Manipal College of Pharmacy, Manipal

- 2016  
Feb 9 Invited talk at National Consultation on the Road to Sustainable Development Goals with special focus on Health and Education, RIS and NITI Ayog, New Delhi
- 2016  
Feb 1 Invited Plenary Lecture, Global Ayurveda Festival, Kozikode, Kerala
- 2016  
Jan 17 Inaugural Plenary Lecture, International Conference HERBESCON, Sri Ramachandra University, Chennai
- 2016  
Jan 4 Invited Plenary Lecture at International Conference INCOFYRA, S-VYASA University
- 2015  
Dec 28 Invited Lecture at 8<sup>th</sup> International Conference on Yoga and Education, Kaivalyadham, Lonavala
- 2015  
Oct 26 Invited lecture Continuing Medical Education at Central Council for Tibetan Medicine, Dharamsala
- 2015  
Oct 18 Invited plenary lecture at Indian Pharmacology Association Annual Conference IPSCON, Saurashtra University, Rajkot
- 2015  
Oct 10 Professor M C Nath Memorial Lecture, Department of Biochemistry, Nagpur University, Nagpur
- 2015  
Sept 24 Invited opening plenary lecture at Conference on Integrative Medicine hosted by Center for Global Health, Colleges of Medicine and Pharmacy, University of Illinois at Chicago, USA.
- 2015  
Aug 27 Exploring the Potential of Ayurvedic Science in Current Cancer Research and Treatments, invited talk given at Webinar organized by the National Institutes of Health, Bethesda, USA.
- 2015  
July 29 Inaugural talk at Workshop on Modern Scientific Techniques for Indian Medicine AU-KBC Research Center, Anna University Chennai, Tamilnadu
- 2015  
July 23 Invited lecture, Drug Discovery and Network Pharmacology, Central Council for Research in Ayurvedic Sciences, New Delhi
- 2015  
Apr 11 Keynote speaker, Ayurveda for Global Health, International Ayurveda Congress, Roermond, The Netherlands (Talk delivered via video conferencing)
- 2015  
Apr 9 Keynote speaker, Evidence based Ayurveda, Second All Russian Ayurveda Congress, Moscow (Talk delivered video conferencing)
- 2014  
Nov 1 Keynote speaker and session chair, 8<sup>th</sup> INTRACOM Conference, Ministry of Health, Government of Malaysia

- 2014  
Oct 26 Invited Speaker, 14<sup>th</sup> International Symposium on Traditional Medicine, Institute of Natural Medicine University of Toyama, Japan.
- 2014  
Sept 11 Invited speaker and Session Chair, Drug Discovery India 2014, Organized by Select Biosciences, Mumbai
- 2014  
May 16 Session Speaker, International Research Congress on Integrative Medicine and Health, Miami, USA. Presented via video.
- 2014  
May 14 Invited Delegate, Global Health Workshop, Penn State University, USA
- 2014  
Mar 20 Invited Speaker, Royal Society of Chemistry DSI Conference on Medicinal Chemistry, Overcoming the Bottlenecks in Drug Discovery, New Delhi. Presented by representative.
- 2014  
Feb 20 Keynote speaker, Global Ayurveda Festival, Kochi, India. Could not attend
- 2014  
Feb 7 National Symposium on Molecular and Ayurvedic Biology of Inflammation Molecular Biology Unit, IMS, BHU, Banaras
- 2014  
Jan 10 Dr. Waldemar Mordecai Haffkine Oration at 116<sup>th</sup> Foundation Day of Haffkine Institute, Mumbai
- 2013  
Dec 12 Invited convener for panel discussion at 46<sup>th</sup> Annual National Conference of Indian Dietetics Association, Pune. I am also advisor to this conference.
- 2013  
Dec 3 Invited speaker for a workshop ‘Convergence of Ayurveda & Modern Medicine’ organized and sponsored by Government of Gujarat.
- 2013  
Dec 16 Sir Ram Nath Chopra Oration 2013, Indian Pharmacological Society Annual Conference, Bangalore
- 2013  
Dec 2 Invited keynote speaker and convener of Workshop on traditional knowledge and systems biology at Applied Systems Biology Conference, Berlin. Sponsor IQPC Berlin. I am working as advisor to this conference. This event was called off by organizers.
- 2013  
Nov 26 Invited speaker for UNESCO Peace Chair MIT endowment lecture series to talk on ‘Ayurveda – the holistic science of mind, body and spirit.
- 2013  
Nov 20 Invited speaker at International Workshop on “Botanical Identification & Evaluation of Indian Medicinal Plants” Sponsor – School of Natural Product Studies, Jadavpur University.

- 2013  
Nov 13 Invited speaker 'Evidence-based Ayurveda' at International Conference on Integrative Medicine organized by College of Medicine UK and SOUKYA Foundation, Bengaluru, India. Sponsor Saukya Foundation. Could not participate due to other exigencies.
- 2013  
Oct 25 Participated in conference and convocation to receive scroll of honor at NAMSCON 2013, Annual Conference of National Academy of Medical Sciences, AIIMS Jodhpur.
- 2013  
Oct 21 Opening Plenary 'Importance of bioprospecting and new approaches in drug development' 148<sup>th</sup> Omics Group conference 'Pharmacognosy 2013' Radisson Blu, Hyderabad.
- 2013  
Oct 7 Invited speaker at ICBS 2013, Conference of International Chemical Biology Society organized at Kyoto University Japan. Sponsor ICBS (Declined due to conflicting travels)
- 2013  
Oct 3 Invited keynote speaker at National Conference on 'New Frontiers in Medicinal Plant Research' Gangtok, Sikkim. Sponsor Central University Sikkim.
- 2013  
Sept 27 Invited keynote 'Natural product drug discovery' at Drug Discovery India Conference, Bangalore. I also served as advisor to the conference to construct sessions and invite speakers. Sponsor Select Biosciences.
- 2013  
Sept 14 Invited speaker 'Newer approaches in drug discovery' at 68<sup>th</sup> Saturday Seminar of Department of Microbiology, University of Pune.
- 2013  
Aug 2 Invited speaker at National conference 'Samyukti - an evidence based approach to integrating Ayurveda and Allopathy'
- 2013  
July 20 Dr P.M. Mehta Oration 'Evidence-Based Medicine and Ayurveda: Where are the epistemological meeting grounds?' Gujarat Ayurved University, Jamnagar
- 2013  
July 5 Invited speaker at BMM Continuing Medical Education Program (July 6) BMM Indo-US Educators Meet at Northeastern University (July 8)
- 2013  
Apr 23 Decadal Celebration Oration 'Ayurveda, drug discovery and beyond' Nirma University Ahmedabad. Sponsor Nirma University
- 2013  
Apr 13 KLE University Oration 'Integrative Medicine: The Future of Universal Health Care'. Jawaharlar Nehru Medical College, Belgaum. Sponsor KLE University.
- 2013  
Apr 5 Invited speaker at Conference on New Drug Discovery and Opportunity for India, Hyderabad. Sponsor Zahir Science Foundation, New Delhi.

- 2013  
Mar 7 Inaugural speaker ‘Innovations in Natural Product Drug Discovery: A Traditional Knowledge Perspective’ National Conference "Natural products in the management of Cancer, Diabetes and Viral infections" at SASTRA University, Thunjavur. Sponsor SASTRA University.
- 2013  
Feb 18 Invited speaker – ‘A pharmacognosy perspective for innovations in forging drug discovery partnerships’ 5th ICDDT Conference, Dubai. Sponsor AlphaBetaPharma, UK
- 2013  
Jan 5 Invited speaker ‘Ayugenomics: Ancient Concepts - Modern Pharmacogenomics’ 45th Indian Pharmacology Society Conference, Nagpur.
- 2012  
Dec 9 Invited speaker ‘Challenges in Privatization and Globalization in Pharma Education’ at 64th Indian Pharmaceutical Congress, Chennai. Sponsor SRM University.
- 2012  
Nov 22 Invited inaugural speaker at Emerging Trends in Ayurveda and Herbal Drug Technology, Teresian College, Mysore
- 2012  
Nov 5 Invited inaugural speaker National Conference on Medicinal Plants Shivaji University, Kolhapur
- 2012  
Sept 6 Invited speakers and session chair at 4th International Conference on Medicinal Plants and Health Products, organized by George Washington University at JHU, Rockville
- 2012  
Sept 14 Invited speaker Indian National Academy of Science Seminar ‘Evolution of Indian Medicine’ Lucknow.
- 2012  
May 31 Invited speaker and session Chair at The ICMR Strategic Thrust Symposium on “Translational Research and Reverse Pharmacology: The Interface of Basic Sciences with Traditional Medicine”, Kasturba Health Society, Mumbai.
- 2011  
Apr 11 Invite speaker at the 10th Annual Oxford International Conference on the Science of Botanicals, University of Mississippi
- 2011  
Mar 27 Invited speaker at the American Chemical Society 241st annual conference in Anaheim, California Mini symposium on "Ancient-Medicine Based Drug Discovery"
- 2011  
Jan 12 Invited speaker at the International Organization for Chemical Sciences in Development the University of the Western Cape, South Africa.
- 2010  
July 28 Invited speaker at the 10th World Bioethics Forum, "Bioethics in a Globalised World" Singapore

2010  
Aug 11 Visited Medical Research Council of South Africa and interactions /lectures at University of Western Cape, University of Pretoria, Durban University, University of KwaZulu Natal

2010  
Dec 8 Chief guest lecturer at Start Award ceremony of American Association of Government College of Pharmacy Bangalore

2010  
Sept Inaugural speech at Seminar on Herbs and Herbal Products, Organized by St Joseph's College Irinjalakuda, Kerala

2010  
Aug 28 Invited speaker at the International Pharmaceutical Federation, FIP World Congress of Pharmacy and Pharmaceutical Sciences, Lisbon, Portugal.

2010  
Mar 25 Invited lecture, Confederation Indian Industries 'Global Ayurveda Summit', Cochin

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Invited speaker, INSA Platinum Jubilee International Symposium, NCL, Pune  
Invited speaker, Royal Society of Chemistry and IUPAC Symposium, Glasgow  
Invited speaker, 7th INTRACOM, Government of Malaysia, July, Kuala Lumpur  
Invited speaker 1st International Ayurveda Congress, Milan, Italy  
Session Chair, AIEA Higher Education Conference, Atlanta, US  
Session Chair, NAFSA Higher Education Conference, Washington DC  
Invited lecture Indo-Australian Conference on Pharmacogenomics, Manipal  
Invited speaker at Indian Pharmaceutical Association Conference, Varanasi  
Keynote, Indian Pharmacological Society Conference, NIPER, Mohali  
Invited speaker Int. Symposium on Medicinal Plants, University of Toronto  
Invited speaker Whole Person Health Summit Chopra Foundation, Bethesda.  
Co Chair and speaker at WHAT Medicine Conference, Kuala Lumpur  
Invited Speaker at CAM Center of Johns Hopkins University, USA  
Invited Expert and Resource person at WHO SEARO meeting, Korea  
Invited Speaker on Ayurveda and Science at NIH/NCCAM, Bethesda  
Invited speaker at 70th Annual Meeting, Indian Academy of Sciences, Varanasi

## Funded Projects (Indicative list)

### Funding Information

Year	Details
	<b>Major Research Projects</b>
2017-	Proposal to conduct one week course 'Drug transporters in health and disease' under Global Initiative of Academic Networks (GIAN) program. A grant of Rs 5,68,600 has been approved by Ministry of Human Resource Development, Government of India to host foreign faculty to conduct this course.
2017 -	Center of Excellence grant for collaborative research project entitled 'Preclinical study on development of therapeutic adjuvants based on Ayurveda' from Ministry of AYUSH. This three year project involves IISER, NCCS, Serum Institute and Manipal University from India and NCI/NIH and Memorial Slone Kettering Cancer Center from USA. The Ministry of AYUSH has approved a grant of Rs 3,50,99,680 for a period of three years.
2017 -	Human Resource Development project 'Traditional Medicine and Integrative Health' has been approved by Department of Health Research, Ministry of Health and Family Welfare, Government of India. The DHR has approved grant of Rs 26,50,000/- for a period of three years.
2016 -	Invited by National Cancer Institute, National Institutes of Health, USA to submit P20 Grant proposal for planning and establishment of 'Regional Center of Research Excellence'. This collaborative proposal involves IISER, NCCS, Serum Institute and Manipal University from India and NCI/NIH and Memorial Slone Kettering Cancer Center from USA. This project received very good comments in the peer review, however was not funded due to unique situation.
2015 -	Network ethnopharmacological investigation for natural phosphodiesterase inhibitors. Principal Investigator in a project under 12 <sup>th</sup> Plan Funding of Rs 5,00,000/-
2013 -2015	Development of e-courses in 'Food and Nutrition'. Invited as Principal Investigator by the University Grants Commission's e-Pathshala program. Funding is Rs 7,00,000 for one year.
2013 - 2015	Herb-Drug interaction studies between prescription drugs and herbal drugs during treatment of Diabetes. Funded by Board of College and University Development, University of Pune. Amount Rs 300,00 for two year duration.
2007 – 2011	Conceptualized and developed an innovative project 'Genomic Variation Analysis and Gene Expression Profiling of Human Dosha Prakriti based on Principles of Ayurveda'. The Office of Principal Scientific Advisor to Government of India approved this project after rigorous peer review and defense made by me. Funding to the extent of Rs 11 million have been granted. During this time, I went on sabbatical and hence the responsibility of Principal Investigator was transferred to my colleague Dr Kalpana Joshi. I continue to participate and guide this project now known as 'Ayurgenomics'.
2006 – 2008	Contributed significantly as PI to develop Indo – US Collaborative program. The Ministry of Health and Family Welfare approved a project 'LCPUFA Status and Birth Outcome in India' with collaborators KEM Hospital Research Center Pune and Cornell University. This project was supported by the National Institutes of Health (NIH), USA under RO1 Scheme with financial outlay of Rs. 1.6 million. During this time, I went on sabbatical and hence the responsibility of Principal Investigator was transferred to my colleague Dr Kalpana Joshi.

- 2003 – 2006 A major project ‘Development of AyuSoft – An intelligent decision support system based on Ayurvedic knowledge’ in collaboration with Center for Development of Advance Computing (C-DAC). Approximate financial outlay of Rs 30 million. Department of Information Technology, Government of India.
- 2004 – 2007 The Drugs and Pharmaceutical Research Cell granted a major project entitled ‘Development of novel herbal adjuvants for vaccines’ in collaboration with India’s largest vaccine manufacturing company Serum Institute of India. Approximate financial outlay of Rs 15 million supported by Department of Science & Technology, Government of India
- 2002 – 2006 Invited as one of three Champions by the New Millennium Indian Technology Leadership Initiative (NMITLI) of CSIR Government of India to develop and execute a national network project entitled ‘Development of Ayurveda based formulations for treatment of arthritis’ in collaboration with over 14 leading national research laboratories and industry partners. Approximate financial outlay of NMITLI herbal drug was Rs140million and that of arthritis component is Rs 35 million.
- 2004 - 2005 Study on ‘traditional medicine for affordable global health’ commissioned by Commission on Intellectual Property Innovation and Public Health, World Health Organization, Geneva. <http://www.who.int/intellectualproperty/studies/B.Patwardhan2.pdf>

#### 1996 – 2012 **Minor Research Projects**

- Conceptualize and implement national program ‘Vaidya Scientists’ for scientific capacity building among young teachers of Ayurveda
- Development of High Impact research projects for Ayurveda sector commissioned by Department of AYUSH
- Vision and development plan for creating education hubs in Pune Mumbai area commissioned by Lavasa City Corporation and Akruti City Corporation
- Study on Internationalization of Higher Education, commissioned by University Grants Commission, Government of India
- Study on ‘Sexuality Sexual Behaviour in relation to HIV/AIDS in India’ commissioned by the Ford Foundation.
- Study on ‘River pollution of Pune city’ commissioned by Impact India Foundation
- Study on ‘Ambient air quality of Pune city’ commissioned by Pune Municipal Corporation

#### **Other Projects**

- 2015 Network Pharmacology of Triphla
- 2014 Counterfeits in herbal drugs
- 2014 Pharmacodynamics of Arjuna
- 2014 Effect of Rasayana drugs on cell differentiation
- 2013 Studies on Herb Drug Interactions
- 2013 Standardization and quality control of poly herbal formulation Britesite
- 2013 Vaccine adjuvant discovery and development from Botanical sources
- 2013 Studies on possible counterfeits from herbal medicines
- 2013 Studies on concurrent consumption of herbal drugs with prescription drugs

## Teaching and Training (Indicative list)

Year	Subjects	Courses
1996 – Present	Integrative Approaches for Health Pharmacology & Toxicology Plural Systems of Medicine & Yoga Human Biology Drug Discovery & Development Environmental Health Plural Systems of Medicine and Yoga Principles of Nutrition Research Methods Scientific Writing, Publication Ethics	MSc & PhD Health Science, MSc Dietetics Master of Public Health M. Pharm. Pharmacognosy, M.Pharm. Pharm. Biotech M.Sc. Ayurvedic Biology PhD Pharmaceutical sciences <b>Teaching Institutes</b> Savitribai Phule Pune University Indian Drug Research Laboratory, Pune Poona College of Pharmacy, Pune TransDisciplinary University, Bangalore

## Research Students Supervised

Year/ Award	Name / Degree	Subject
<b>Post Doctoral Fellows</b>		
2016	Sarika Chaturvedi, DSK UGC PDF	Evidence-based Ayurveda and Public Health
2014	Uma Chandran DSK UGC PDF	Network pharmacology and Drug discovery
2013	Dada Patil	Herb – Drug Interactions, Pharmacokinetics

Year	Doctoral Students	Research topic
2017/	Akash Saggam	Vaccine Adjuvant and Networkpharmacology
2017	Pradeep Nair	Therapeutic Fasting in Naturopathy
2017	Hyndavi Salva	Sunbath on Health and Wellness
2016/	Sonali Wagle	Diet and metabolic diseases
2016/	Sangeeta Palaskar	Oral cancers in Indian population
2016/	Sameer Jadhav	Ayurveda and Oral Health
2016/	Bapu Borotikar	Yoga in Mental Health
2016/Awarded	Tillu Girish / Ph.D	Pharmacoepidemiology
2014/Awarded	Paranjpe Maithili / Ph.D	Nutrition and birth outcomes in pregnant women
2012/Awarded	Dada Patil / PhD	Pharmaceutical and Biomedical Analysis
2011/Awarded	Sanjay Mishra / PhD	Imuunoadjuvant activity
2010/Awarded	Puranik Amrutesh / Ph.D	Safety pharmacology of Cassia ariculata
2009/Awarded	Ghodke Yogita / Ph.D	Pharmacogenomics and Rheumatoid arthritis
2007/Awarded	Chavan Preeti / Ph.D	Molecular markers for medicinal plants
2007/Awarded	Warude Dnyanesh / Ph.D	Molecular markers for medicinal plants
2006/Awarded	Sharma Hema / Ph.D	Anti aging Ayurvedic formulations
2006/Awarded	Gautam Manish / Ph.D	Vaccine adjuvants from Rasayana plants
2005/Awarded	Afsaneh Kermavat / Ph.D	Osteoporosis risk factors among Iranian women
2005/Awarded	Joshi Nandini / Ph.D	Occupational hazards of noise pollution
2004/Awarded	Patil Manohar / Ph.D	Immunomodulatory activity of Tinospora
2001/Awarded	Diwanay S.S / Ph.D	Cancer adjuvant activity of Ayurvedic plants

1999/Awarded	Oseperampil S. / Ph.D	Complementary & Alternative Medicine
1999/Awarded	Chavan R.K. / Ph.D	Tobacco addiction, adulteration and public health
1998/Awarded	Mujumdar S.M. / Ph.D	Pharmacology of medicinal plants
1997/Awarded	Sarmukaddam S. / Ph.D	Biostatistics and epidemiological methods

## Graduate Students

Year	Name	Research topic
2016	Shriya Lele/MSc	Biotechnology
2015	Mayuri Dharne/MSc	Biotechnology
2015	Saniya Patil/M.Sc	Network Pharmacology
2014	Neelay Mehendale/M.Sc	Network pharmacology
2008	Camy Goyal / M.Pharm	Immunomodulators from botanicals
2007	Thube Nitin / M.Pharm.	Safety studies on selected Bhasmas
2007	Joshi Varsha / M.Pharm.	Safety studies on selected Bhasmas
2006	Jadhav U / M.Pharm.	Studies on Herbal Formulations Stability
2005	Patil Dada / M.Pharm.	Studies on Herbal Formulations Stability
2005	Mishra Sanjay / M.Pharm.	Herbal Vaccine Adjuvants
2004	Takawale S / M.Pharm.	Pharmacokinetic studies
2003	Shinde V./ M.Pharm.	Molecular pharmacognosy
2002	Warude D./M.Pharm.	Etnopharmacological Applications
2001	Gautam M./ M.Pharm.	Botanical immunomodulators
1999	Jadhav Anil / M.Pharm.	Anti-inflammatory activity of Ayurvedic plants
1998	Jadhav Ram / M.Pharm.	Anxiolytic potential of celastrus paniculatus
1997	Agarwal R./M.Pharm.	Withania Somnifera on immune inflammation.
1996	Anu Grandhi/M.Pharm.	Pharmacology of Ashwagandha and Ginseng.
1995	Manu Acharya/ M.Pharm.	Toxicity studies on Abhrak
1995	Moha Ziauddin/ M.Pharm	Immunomodulatory effect of Withania
1995	Rajendra Pant / M.Pharm.	Comparative biological studies on Pongamia glabra
1994	Golikere Chai / M.Pharm.	Studies on Artemisia pallens wall. Ex DC
1994	Nehete J. / M.Pharm.	Immunomodulatory effect of Asparagus racemosus

## Scientific Assessments (Indicative list)

Worked on several national and international committees for scientific assessment including research project review, funding, institutional reviews, performance assessment. (Indicative list)

<b>Year</b>	<b>Nature of Experience</b>	<b>Institution</b>
2016 -	Member, Research Review Committee, Central Council for Research in Ayurvedic Sciences (CCRAS)	Ministry of AYUSH, Government of India
2016 -	Member, Inter-Departmental Committee for identifying viable new systems of medicine	Ministry of Health and Family Welfare, Department of Health Research, Government of India
2016 -	Member, Committee for National Policy on AYUSH	Ministry of AYUSH, Government of India
2016 -	Member, Committee to Review Functioning of Research Councils	Ministry of AYUSH, Government of India
2016 -	Member, Board of Studies, Pharmaceutical Sciences	All India Council for Technical Education, Government of India
2016 -	Member, Research Policy Committee	Bharati Vidyapeeth Deemed University
2016 -	Chairman, Board of Studies in Basic Medical Sciences and Health Sciences	Savitribai Phule Pune University
2015 -	Member, Research Advisory Council	Manipal University, Manipal
2015 -	Member, Task Force	Ministry of AYUSH, Government of India
2015 -	Expert Member, ICMR-DRDO Committee	Indian Council of Medical Research, Government of India
2015 -	Chairman, Committee for 'Guidelines for Research Publications'	Savitribai Phule Pune University
2014/05 - Present	Vice Chairman, Expert Group on Translational Research for Products and Processes from Medicinal and Aromatic Plants	Department of Biotechnology, Government of India
2013/11 - Present	Expert Member, Working Group on Nutraceuticals,	Food Safety and Standards Authority of India, Government of India, New Delhi
2013 /09 -	Member Institutional Review Committee	Tata Institute of Social Sciences, A deemed University, Mumbai
2013 – Present	Member, Ayurveda Advisory Committee	Government of Madhya Pradesh (M.P.) Bhopal, India
2013 – Present	Member Health Centre Advisory Committee	University of Pune
2013 – Present	Member, Scientific Advisory Committee	Nirma University, Ahmedabad
2012 – Present	Member Advisory Board	Vanarai Trust Pune – an NGO dedicated to nature and environment conservation
2011 – Present	Member Research Council, National Botanical Research Institute, Lucknow	Council for Scientific and Industrial Research
2011 – 2012	Chairman, Mission Group on Traditional Knowledge	Government of Karnataka, Bangalore

2010 – Present	Member Research Advisory Committee, Regional Medical research Centre Belgaum	Indian Council of Medical Research
2010 – 2011	Member Inter-sectoral Innovation Council	Department of AYUSH Government of India
2009 – 2012	Chairman Research Monitoring Committee of Centre of Relevance and Excellence in Pharmacogenomics, Manipal University	Technology Information Forecasting and Assessment Council, Government of India
2009 – 2010	Member International Council Research Committee AYUSH	Government of India
2006 – Present	Member Research Advisory Committee	Jana Prabodhini Research Institute Pune
2008 – 2012	Member Subcommittee, Karnataka Knowledge Commission	Government of Karnataka
2002 – 2006	Member, Academic Advisory Board, National Institute of Pharmaceutical Education and Research	Government of India
2006 – 2007	Chairman, Working group on Traditional Knowledge	National Knowledge Commission, Government of India
2005 – 2006	Member Task force 11 <sup>th</sup> Five Year Plan	Planning Commission, Government of India
2002 – 2004	Co Chair, Biotechnology Committee,	Maratha Chamber of Commerce and Industries
2002 – 2005	Chairman Steering Committee, New Millennium Indian Technology Leadership Initiative, Arthritis Herbal Drug Development Group	Council for Scientific and Industrial Research
2000 – 2001	Member Task force for Maharashtra Biotechnology Policy	Government of Maharashtra
1999 – 2000	Member Organizing Committee, Local Organizing Secretary and Chief coordinator	87 <sup>th</sup> Indian Science Congress, Pune

## **Grant Reviews**

<b>Year of Membership</b>	<b>Name of Committee</b>	<b>Organization</b>
2014/05 - Present	Vice Chairman, Expert Group on Translational Research for Products and Processes from Medicinal and Aromatic Plants	Department of Biotechnology, Government of India
2012 – Present	Member Program Advisory and Monitoring Committee, Technology Enabled Interventions for Disabled and Elderly (TIDE) program. This scheme receives over 100 grant proposals from reputed research institutions and industries	Department of Science and Technology, Government of India

2010 – 2011	Member of Technical Steering Committee of Small Business Innovative Research Initiative (SBIRI). This scheme receives over 100 grant proposals from reputed research institutions and industries	For Department of Biotechnology, Government of India
2006	Grant review performed for Comprehensive HIV/AIDS Care Treatment and Management Plan for South Africa	Department of Health, Medical research Council, South Africa
2006 – 2011	Member, Project Monitoring Committee to Review scientific progress of major grant given to establish national facility in Pharmacogenomics at Manipal Life Science Center	For Department of Science and Technology, Government of India
2006 – 2007	Member Independent Review Committee to consider major grant to Foundation for Revitalization of Local Health traditions, Bangalore.	For Sir Ratan Tata Trust, Mumbai
1996 – Present	During my tenure as full professor at the State University, I must have reviewed over 50 major grant proposals received from national funding agencies. This list is very large. Few examples of involvement in review of grants and performances of institutions or persons are given here only as indicative	I have done reviewing for most of major funding agencies. The indicative list is as under: Department of Science and Technology; Department of Biotechnology; Council for Scientific and Industrial Research' Indian Council for Medical Research; Government of Maharashtra; Government of Karnataka;North Eastern States Council; Tata Trusts; Medical Research Council South Africa

**Other Reviews**

2014	Review of Recommendations and Vision Plan of Ayurveda Advisory Committee,	Government of Madhya Pradesh, Bhopal
2013	Review of online courses on Ayurveda National Program on Technology Enabled Learning (NPTEL)	Indian Institute of Technology, Madras
2013	Invited as one of the three Juries to review Lead India Program to identify young agents of change based on national competitive search. Five youngsters were selected from amongst hundreds of aspirants	Times of India Group of Newspapers
2013	Invited as Member of Selection cum search Committee for Director of National Institute of Pharmaceutical Education and Research	Indian Council for Medical Research, Government of India
2010	Review of nominations for awards to entrepreneurs. Innovations. Invited as referee.	The Indian Science and Technology Entrepreneurs Parks and Business Incubator Association (ISBA)

2009                      Review of nominations received for Young      The EDGE Forum  
EDGE Award.

### **Review of Dissertations / Books**

### **Names of Organizations**

1996 –  
Present                      Invited by many reputed Universities as  
external examiner to review and evaluate  
PhD thesis / dissertations. List of PhD /  
Graduate thesis reviewed by me is very  
extensive. Names of few indicative  
Universities are given here.

University of Aalborg, Denmark; Hamdard  
University, Karachi; Jadavpur University,  
Kolkata; JIPMER, Puducherry; National  
Institute of Pharmaceutical Education &  
Research, Mohali; Mumbai University,  
Mumbai; Nirma University, Ahmedabad;  
Mysore University, Mysore; Manipal  
University, Manipal; Mangalore University,  
Mangalore; SASTRA University,  
Thunjavur; NMIMS University, Mumbai

2000 to  
Present                      Reviewed several proposals for new books  
/ special issues for reputed publishers

Elsevier Publishers; Springer Publishers;  
Hindawi Publishers; Bentham Science;  
Wolters Kluver

## **Performance Reviews**

Invited by many reputed agencies for Performance/ Appraisal of senior positions like Professors in Universities, Directors of National Institutions. Few reprehensive names are as follows:

Central Council for Research in Ayurvedic Sciences; Council for Scientific & Industrial Research, New Delhi; National Institute of Advanced Studies, Bangalore; National Institute of Pharmaceutical Education and Research, Mohali; Maharashtra University of Health Sciences, Nasik; Institute of Ayurveda & Integrative Medicine, Bangalore; Karnataka Knowledge Commission; National Chemical Laboratory, Pune; University of Pune; National AIDS Research Institute, Pune; Serum Institute of India, Pune; Unilever Research Center, Bangalore; Torrent Pharmaceuticals Ltd, Ahmedabad; Centaur Pharmaceuticals, Mumbai; DY Patil University, Pune; Bharati; Vidyapeeth University Pune; YASHADA Pune.

## Editorial Activities

### Journal Editor

Year	Role	Journal name
2009 – Present	Founder Editor-in-Chief <a href="http://www.jaim.in">www.jaim.in</a>	<i>Journal of Ayurveda &amp; Integrative Medicine</i> (J-AIM), Elsevier
2010 – Present	Academic Editor <a href="http://www.hindawi.com/journals/ecam/editors/">http://www.hindawi.com/journals/ecam/editors/</a>	<i>Evidence-based Complementary &amp; Alternative Medicine</i> (eCAM) Hindawi Publishing Corporation
2008 – Present	Editorial Board Member <a href="http://www.liebertpub.com/editorialboard/journal-of-alternative-and-complementary-medicine-the/26/">http://www.liebertpub.com/editorialboard/journal-of-alternative-and-complementary-medicine-the/26/</a>	<i>Journal of Alternative &amp; Complementary Medicine</i> (JACM) Mary Ann Liebert Inc Publisher
2012 – Present	Editorial Board Member <a href="http://www.springer.com/medicine/journal/11655?detailsPage=editorialBoard">http://www.springer.com/medicine/journal/11655?detailsPage=editorialBoard</a>	<i>Chinese Journal of Integrative Medicine</i> (CJIM) Springer
2015-	Editorial Board Member	<i>Current Traditional Medicine</i> Bentham Science Publishers
2013 – Present	Editorial Board Member (Section Editor Pharmacognosy (2013-16) <a href="http://www.benthamscience.com/cchts/EBM.htm">http://www.benthamscience.com/cchts/EBM.htm</a>	<i>Combinatorial Chemistry &amp; High Throughput Screening</i> (CCHTS) Bentham Science Publishers
2008 – Present	Editorial Board Member <a href="http://www.indiandrugsjournal.com/indiandrugs/editorial_board.php">http://www.indiandrugsjournal.com/indiandrugs/editorial_board.php</a>	<i>Indian Drugs</i> Indian Drug Manufacturer Association
2012 -	Member	Committee on Publication Ethics (COPE)
2012 –	Member	World Association of Medical Editors (WAME)
2013 –	Member	Indian Association of Medical Journal Editors (IAMJE)

### Journal Reviewer (Indicative list)

Applied Biochemistry and Biotechnology;  
Ancient Science of Life  
AYU International  
BMC Complementary & Alternative Medicine  
BMC Medicine  
Chimica Oggi/ Chemistry Today  
Clinical Microbiology & Infection  
Current Science  
Expert Opinion in Drug Discovery  
European Journal of Integrative Medicine  
Evidence-based Complementary & Alternative Medicine  
Food Chemistry  
Indian Drugs  
Indian Journal of Biotechnology

Indian Journal of Medical Sciences  
International Journal of Ayurveda Research  
International Journal of Integrative Biology  
Journal of Alternative & Complementary Medicine  
Journal of Biosciences  
Journal of Ethnopharmacology  
Journal of Medicinal Plant Research  
Journal of Pharmacy and Pharmacology  
Journal of Pharmacognosy & Phytotherapy  
Journal of Translational Medicine  
Nature Scientific Reports  
Phytotherapy Research  
The Biological Bulletin  
Vaccine

# Intellectual Property

## Trademarks:

1. **Ayugenomics™** Issued Certificate of Registration of Trade Mark under Trade Mark Act 1999 Section 23(2), Rule 62(I) by Trademark Registry, Government of India. Number 1127075 dated 19-08-2002, J.No. MEGA-6.
2. **AyuSoft™** Issued Certificate of Registration of Trade Mark under Trade Mark Act 1999 Section 23(2), Rule 62(I) by Trademark Registry, Government of India. Number 1259514 dated 06-01-2004, J.No. MEGA-1326 S-I.

## Patents:

1. Jadhav S S, Patwardhan B, Gautam M. US Patent Number 8 501 186 B2. August 8, 2013. 'Adjuvant Composition for Vaccine'
2. Puranik A, Patwardhan B. WO Patent Application WO 2012/140666 A2. October 18, 2013. 'Herbal extracts and compositions prepared therefrom'.
3. Patwardhan B et al. US Patent Application 2012/0021077 A1. January 26, 2012. 'A composition useful for treatment of rheumatic and musculoskeletal disorders (RMSDs) comprising a poly herbal fully standardized base formulation'.
4. Patwardhan B et al. January 22, 2009. WO Patent Application. WO 2009/010992 A2. WO 2009/010992 A3R4. March 26, 2009. 'Synergistic herbal composition for treatment of rheumatic and musculoskeletal disorders'
5. Gautam. M. and Patwardhan.B. Aqueous extracts of plant products. Indian Patent Number 234927 (Granted Year 2009). (International classification number: A67K35/78.
6. Gautam. M. and Patwardhan. B. A novel process for preparation of aqueous extracts of medicinal plants. Indian Patent Number 234928 (Granted Year 2009). International Classification Number: A67K 35/78.
7. Gautam. M and Patwardhan. B. A kit containing a vaccine and an immunological adjuvant. Indian Patent Number 236009 (Granted Year 2009). International classification number: A61K39/39 A61K35/78.
8. Jadhav SS, Patwardhan B, Gautam M. Adjuvant composition for vaccine. Indian Patent Application under grant -1184/MUM/2009 (Filed in Year 2009; Under Grant).
9. Patwardhan B. US Patent Number 5474668. February 27, 1996. 'Method of treating musculoskeletal diseases and a novel composition therefor'.

## Scientific Publications Retrieved from Scopus on 15 June 2021

Google Scholar data shows total 9800 citations with h-index 49 and i10-index 114. A list of 175 publications in chronological order retrieved from Scopus as on 15 June 2021 is as follows:

1. Aiyar Y, Chandru V, Chatterjee M, Desai S, Fernandez A, Gupta A, Kang G, Khanna T, Mazumdar-Shaw K, Mor N, Mukherji A, Muttreja P, Narayan T, Patwardhan B, Rao KS, Sharma S, Shetty D, Subramanian SV, Varkey LEC, Venkateswaran S, Patel V. India's resurgence of COVID-19: Urgent actions needed. *Lancet* . 2021;397(10291):2232-4.
2. Saggam A, Limgaokar K, Borse S, Chavan-Gautam P, Dixit S, Tillu G, Patwardhan B. *Withania somnifera* (L.) dunal: Opportunity for clinical repurposing in COVID-19 management. *Front Pharmacol* . 2021;12
3. Patwardhan B, Sarwal R. Significance of AYUSH: India's first line of defence against COVID-19. *J Ayurveda Integr Med* . 2021;12(2):227-8.
4. Patwardhan B, Lakhota SC. Traditional knowledge systems and new science policy thrust. *Curr Sci* . 2021;120(4):603-4.
5. Anand A, Patwardhan B. Whose duty is it anyway? *Ann Neurosci* . 2021
6. Chaturvedi S, Randive B, Pathak A, Agarkhedkar S, Tillu G, Darmstadt GL, Patwardhan B. Prevalence and perceptions of infant massage in india: Study from maharashtra and madhya pradesh states. *BMC Pediatr* . 2020;20(1)
7. Patwardhan B, Chaturvedi S. India in COVID-19 times: Modern and wiser. *J Ayurveda Integr Med* . 2020;11(4):367-8.
8. Lele RD, Patwardhan B. Transiting from pathy-based to people-centered holistic healthcare. *J Ayurveda Integr Med* . 2020;11(3):A1-3.
9. Patwardhan B, Desiraju GR. Assessing research: The slippery slope. *Curr Sci* . 2020;118(12):1869-70.
10. Mittal P, Radkar A, Kurup A, Kharola A, Patwardhan B. Measuring access, quality and relevance in higher education. *Econ Polit Wkly* . 2020;55(24):34-8.
11. Saggam A, Tillu G, Dixit S, Chavan-Gautam P, Borse S, Joshi K, Patwardhan B. *Withania somnifera* (L.) dunal: A potential therapeutic adjuvant in cancer. *J Ethnopharmacol* . 2020;255
12. Patwardhan B, Chavan-Gautam P, Gautam M, Tillu G, Chopra A, Gairola S, Jadhav S. Ayurveda rasayana in prophylaxis of COVID-19. *Curr Sci* . 2020;118(8):1158-60.
13. Tillu G, Chaturvedi S, Chopra A, Patwardhan B. Public health approach of ayurveda and yoga for COVID-19 prophylaxis. *J Altern Complement Med* . 2020;26(5):360-4.
14. Tillu G, Salvi S, Patwardhan B. AYUSH for COVID-19 management. *J Ayurveda Integr Med* . 2020;11(2):95-6.
15. Patwardhan B, Nagarkar S, Sarma VV. UGC-CARE list. *Curr Sci* . 2020;118(1):9a-10a.
16. Girme A, Saste G, Chinchansure A, Joshi S, Kunkulol R, Hingorani L, Patwardhan B. Simultaneous determination of anthraquinone, flavonoids, and phenolic antidiabetic compounds from cassia auriculata seeds by validated uhplc based ms/ms method. *Mass Spectrom Lett* . 2020;11(4):82-9.
17. Patwardhan B. Ten years of J-AIM. *J Ayurveda Integr Med* . 2020;11(1):1-2.
18. Grudniewicz A, Moher D, Cobey KD, Bryson GL, Cukier S, Allen K, Ardern C, Balcom L, Barros T, Berger M, Ciro JB, Cugusi L, Donaldson MR, Egger M, Graham ID, Hodgkinson M, Khan KM, Mabizela M, Manca A, Milzow K, Mouton J, Muchenje M, Olijhoek T, Ommaya A, Patwardhan B, Poff D, Proulx L, Rodger M, Severin A, Strinzel M, Sylos-Labini M, Tamblyn R, van Niekerk M, Wicherts JM, Lalu MM. Predatory journals: No definition, no defence. *Nature* . 2019;576(7786):210-2.

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20. Patwardhan B, Thakur A. UGC-CARE initiative to promote research quality, integrity and publication ethics. *Curr Sci* . 2019;117(6):918-9.
21. Patwardhan B. Why india is striking back against predatory journals. *Nature* . 2019;571(7763):7.
22. Mutalik G, Tillu G, Patwardhan B. AyurYoga, the confluence of healing sciences: A call for global action. *J Ayurveda Integr Med* . 2019;10(2):79-80.
23. Shengule SA, Mishra S, Patil D, Joshi KS, Patwardhan B. Phytochemical characterization of ayurvedic formulations of terminalia arjuna: A potential tool for quality assurance. *Indian J Trad Knowl* . 2019;18(1):127-32.
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29. Patwardhan B, Tillu G. J-AIM: Progress, policy and future plans. *J Ayurveda Integr Med* . 2017;8(4):213-4.
30. Shankar D, Patwardhan B. AYUSH for new india: Vision and strategy. *J Ayurveda Integr Med* . 2017;8(3):137-9.
31. Patwardhan K, Patwardhan B. Ayurveda education reforms in india. *J Ayurveda Integr Med* . 2017;8(2):59-61.
32. Mukherjee PK, Katiyar CK, Patwardhan B. Editorial: Special issue on ayurveda. *J Ethnopharmacol* . 2017;197:2.
33. Chandran U, Patwardhan B. Network ethnopharmacological evaluation of the immunomodulatory activity of withania somnifera. *J Ethnopharmacol* . 2017;197:250-6.
34. Patwardhan B, Chaguturu R. Preface. *Innov Approach in Drug Discov : Ethnopharmacol , Syst Biol and Holist Target* . 2017:xxix-xxxvi.
35. Chaturvedi S, Raven J, Patwardhan B. Addressing child under nutrition: Can traditional practices offer a solution? *Global Health Action* . 2017;10(1)
36. Patwardhan B. Indian science and predatory journals. *J Ayurveda Integr Med* . 2017;8(1):1-2.
37. Chaguturu R, Patwardhan B. Collaborative Strategies for Future Drug Discovery In: *Innovative Approaches in Drug Discovery: Ethnopharmacology, Systems Biology and Holistic Targeting* . . ; 2017 p. 387-410. DOI: 10.1016/B978-0-12-801814-9.00015-5
38. Chandran U, Mehendale N, Patil S, Chaguturu R, Patwardhan B. Network Pharmacology In: *Innovative Approaches in Drug Discovery: Ethnopharmacology, Systems Biology and Holistic Targeting* . . ; 2017 p. 127-64. DOI: 10.1016/B978-0-12-801814-9.00005-2
39. Gautam M, Patwardhan B, Gairola S, Jadhav S. Vaccines and Immunodrugs Discovery In: *Innovative Approaches in Drug Discovery: Ethnopharmacology, Systems Biology and Holistic Targeting* . . ; 2017 p. 315-41. DOI: 10.1016/B978-0-12-801814-9.00011-8
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In addition, have published over 300 articles in Magazines, News Papers, and other popular media sources. These articles are mostly in English and Marathi (mother tongue). Have written on various subjects including popular science, health, medicine, environment, Ayurveda, Yoga and Education. Two books have been recently published compiling selected articles published in Marathi News Papers like Sakal, Lokasatta, Maharashtra Times and English News Papers like Times of India, Indian Express. Three books, several book chapters and articles are published including Arogyadayi Paryavaran (Marathi), A unique book for School children highlighting importance of environment and conservation of nature to promote health and prevent diseases. Continental Publishers, Pune, 1998. Arogya ani Ayurveda (Marathi), A collection on selected articles on health and Ayurveda written by Bhushan Patwardhan, Padmagandha Publishers Pune 2012. Shikshan ani Paryavaran (Marathi), a collection of selected articles on Environment and Education written by Bhushan Patwardhan, Padmagandha Publishers Pune, 2012. Several videos are available on the YouTube and online educational platforms.

## Association with Professional Societies

<b>Year</b>	<b>Name</b>	<b>Title of Role</b>
2021	India International Center, New Delhi	Member
2017	International Longevity Center Pune	Hon Director
2017	Indo Swiss Ayurveda Foundation, Geneva	Board Member
2016	National Academy of Sciences (India)	Elected Fellow
2013	National Academy of Medical Sciences	Elected Fellow
2012	Society for Ethnopharmacology	Member
2009	Institute of Indian Medicine	Elected Fellow
2000	Maharashtra Academy of Sciences	Elected Fellow
1998	Maharashtra Association of Anthropological Studies	Life Member
1998	Indian Association for Study of Traditional Asian Medicine	Life Member
1998	Indian Public Health Association	Life Member
1988	Indian Association for Cancer Research	Life Member
1988	Indian Drug Research Association	Life Member
1988	Indian Association for Clinical Pharmacology and Therapeutics	Life Member
1988	Indian Medical Association	Life Member

## Scientific Contribution Highlights

**Broad Area:** Integrative Health and Medicine, Ethnopharmacology and Ayurvedic biology

**Specific Research Contributions:** Botanical pharmaceuticals, Formulation discovery, Network pharmacology, Immunomodulation, Therapeutic adjuvants, COVID-19

A Research Account article "The quest for evidence-based Ayurveda: lessons learned." *Current science*, 2012: 102(10),1406-1417 provide glimpses of his scientific contributions spanning over 30 years. He is the topmost cited author in the field of evidence-based Ayurveda.

### I. Immunomodulation and adjuvants:

Significant contributions on the immunomodulatory activity of Ashwagandha (*Withania somnifera*), Guduchi (*Tinospora cordifolia*) and Shatavari (*Asparagus racemosus*). He used standardized extracts and formulations to evaluate anti-stress, adaptogenic, immuno and myelo-protectants activities of Ayurvedic medicinal plants. In an interesting study he reported Ashwagandha as better and safer drug to Ginseng. He has studied pharmacodynamics of Ashwagandha in experimentally induced tumors and immune suppressed mouse models to demonstrate its selective Th1 upregulation effect and potentiation of cellular and humoral immune response comparable to Levamisole and faster recovery of CD4+ T cells as compared to cyclosporin. The study has translational value for possible use as vaccine adjuvants, cancer therapeutics and other immune-compromised conditions. Based on these research contributions he has been awarded Center of Excellence grant from Ministry of AYUSH for a project to develop therapeutic adjuvants for cancer. This project is in collaboration with National Center for Cell Sciences Pune, Indian Institute of Science, Education and Research Pune, Manipal University, Serum Institute of India Pune and National Cancer Institute and Memorial Sloan Kettering Cancer Center from the United States. This work will immensely help to give impetus for scientific research on Ayurveda to develop safer drugs, therapeutic adjuvants and better vaccines for use in immuno-pathological conditions and for affordable public health. One US patent and four Indian Patents have been granted for therapeutic adjuvants.

### II. Natural product drug development:

Prof Patwardhan has done significant work on standardization, quality control and development new botanical drugs by using molecular and chemical methods. He promoted reverse pharmacology approach for natural product drug development. He used network pharmacology tools to understand bioactive-target-disease relationship in complex multi ingredient rational formulation discovery. He has successfully used multi target approach for treatment of osteo and rheumatoid arthritis. His work showed that rationally developed standardized polyherbal formulation can address multiple clinical targets including pain, cartilage regeneration, chondroprotection. He was Principal Investigator for CSIR NMITLI Herbal Drug Development project. In a randomized multicentric clinical trial, one of his formulations has been found to be therapeutically equivalent to Celecoxib and Glucosamine. One US and two Indian Patents have been granted that are commercialized. This work was recognized by European Society for Integrative Medicine by conferring its annual award for the year 2013.

### **III. AyuGenomics:**

His pioneering work on genetic basis to Prakriti has led to new research area known as AyuGenomics with potential applications in pharmacogenetics and personalized medicine. He studied HLA DRB1 and CYP2C19 gene polymorphism in blind studies and reported statistically significant distributions of alleles between different three Prakriti types. Research articles on this pioneering work have received over 140 citations and led to a national project on ‘Genomic Variation Analysis and Gene Expression Profiling of Prakriti types’ supported under Ayurvedic biology program by the PSA / DST. He has also conceptualized and developed AyuSoft as a decision support system capturing knowledge and logic from Ayurveda. These research contributions are likely to have positive implications on future research in pharmacogenetics, medical informatics, personalized medicine and public health.

### **IV. Integrative Medicine:**

Several articles and reviews on importance of traditional and integrative medicine published by him are very well cited. The World Health Organization, Geneva awarded him a study ‘Traditional Medicine: Modern approach for affordable global health’ that reviewed the existing evidence base on the use of traditional medicine and analysed its benefits to improve accessibility, availability and affordability of health care. His scholarly books ‘Integrative Approaches for Health’ and ‘Innovative Approaches to Drug Discovery’ both published by Academic Press Elsevier have received excellent reviews. In recognition of his contributions, *Drug Discovery Today* (Elsevier) published his article on Ayurveda that has received over 180 citations.

### **V. AYUSH for COVID-19:**

As Chairman of the Interdisciplinary AYUSH R&D Task Force on COVID-19 he facilitated preclinical and clinical research on AYUSH medicines. He is promoting integrative approach for effective prophylaxis and clinical management of mild, moderate COVID-19. Over 100 clinical trials are underway at reputed hospitals involving modern and AYUSH doctors. This include randomized controlled clinical trial to compare *Withania somnifera* (Ashwagandha) and Hydroxychloroquine for chemoprophylaxis of Covid-19. A major collaborative initiative between Ministry of AYUSH and Council of Scientific and Industrial Research involves multicenter controlled clinical trials on Ayush 64, *Tinospora cordifolia*, *Piper longam* and *Glycyrrhiza glabra*. Several preclinical studies on in silico, in vitro and in vivo models have been planned in collaboration with Department of Biotechnology. As Chairman of Publication Advisory Committee he is mentoring AYUSH researchers to improve quality of reporting and scientific publications in good journals. An ambitious RCT has been planned to study effect of coadministration of Ashwagandha on safety and immunogenicity of Covishield vaccine.

# Academic Contribution Highlights

## I. At Pune University

Associated with Savitribai Phule Pune University (erstwhile University of Pune) since 1979 as undergraduate from Fergusson College, post graduation in Biochemistry under Prof John Barnabas and doctoral degree under Prof Samuel David from Pune University and Haffkine Institute Mumbai. After PhD worked as research scientist in pharmaceutical industry. Taking inspiration from Prof P V Sukhatme, returned to academics and helped establishment of Interdisciplinary School of Health Sciences (ISHS) at the University. Became full time Faculty at ISHS from 1994 initially for two years as Associate Professor and from 1996 as a full professor. Was Director of ISHS for several years. Experience of working on most of the statutory bodies of the University including the Executive Council, Management Council, Academic Council, Faculty of Science, Boards of Studies, Board of Examination, and many others. This helped in understanding nuances of higher education and University administration. Worked with several Vice Chancellors including Prof Ram Takwale, Dr VG Bhide, Dr Shridhar Gupte, Dr Vasant Gowariker, Dr Arun Nigavekar and Dr W N Gade. Worked as an Organizing Secretary of Indian Science Congress 2000 with Dr R A Mashelkar as President, and Dr Arun Nigavekar Vice Chancellor. This remains a hallmark of organizational success. Under mentorship of Dr Mashelkar, DG CSIR developed multi institutional national network project on Ayurveda and botanical drugs. Was able to attract substantial research funding from national and international agencies such as CSIR, DST, ICMR, and WHO. Worked at leadership positions at nationally important institutes on three occasions on sabbatical / lien. This includes Manipal Education Group, Bangalore, Institute of Ayurveda and Integrative Medicine, Bangalore and Symbiosis International University Pune. These stints offered diverse experiences of academic leadership, administration, research and development.

## II. At FRLHT, I-AIM, TDU - Bangalore

Under advice of Dr Sam Pitroda, accepted position of Executive Director of Foundation for Revitalization of Local Health Traditions, Worked with Prof Darshan Shankar to attract over 50 crore funding from Tata Trust and facilitated establishment of Institute of Ayurveda and Integrative Medicine in Bangalore with state-of-the-art hospital, laboratories. This hospital provides authentic treatment based on Ayurveda and Indian systems of medicine with modern diagnostics facility. FRLHT has a largest database on Indian medicinal plants and several sites for gene banks and in situ conservation. A unique program "Vaidya Scientists" was built for research capacity building of young teachers of Ayurveda from universities and colleges. Launched an international peer reviewed scientific publication known as *Journal of Ayurveda and Integrative Medicine* currently being published by Elsevier. During his tenure FRLHT-I-AIM was recognized by the Ministry of AYUSH as a Center of Excellence, which gradually evolved as Transdisciplinary University - TDU recognized by the Government of Karnataka. This private University pioneered development of innovative teaching and research programs in local health traditions and evidence-based Ayurveda.

## III. Manipal Education Group - Bangalore

During the three year tenure as Chief of Academics of the Manipal Education Group at Bangalore headquarters, executed an innovative concept 'Academics Central' to bring synergy between various institutions and campuses, including Manipal University, Sikkim Manipal University and professional colleges along with international campuses in Nepal, Malaysia, Dubai, and Antigua. Gained experience in corporate governance, strategy and leadership at the Manipal Education Group and was sponsored for Executive Management Program at IIM Bangalore. Was involved in associated companies of Manipal group, including MeritTrac, India's largest Testing and Assessment Corporation, Stempeutics, an innovative initiative regenerating hope in Stem Cell therapeutics, and Acunova, a state-of-the-art clinical research company. Taking inspiration from Prof M.S. Valiathan, strengthened research in Ayurvedic biology. These research companies were working closely with the University for teaching and research. Developed a major technology adaptation drive and created an innovative IT architecture known as Manipal Universal Learning Networks (MULN). Also developed an online learning initiative known as EduNxt as a next-generation interactive learning system to offer high quality education to thousands of students anytime, anywhere at an affordable price. Was part of core team that established ICICI-Manipal Academy that emerged as premium corporate institute as a model Industry-University collaboration. As part of Manipal's Leadership group, closely participated in key acquisitions and collaborations, including those with 'Universitas 21 Global', Singapore, City & Guild, UK, American University Antigua and College Board, USA. Under guidance of Dr K. Kasturirangan, as convener, facilitated formation of 'EDGE Forum' comprising of top 10 Indian Universities to share best practices and for providing collective leadership for innovations in higher education sector.

#### **IV. At Symbiosis International University - Pune**

As Vice Chancellor at Symbiosis within a relatively short span of 18 months, he could recruit over 150 teaching Faculty; established new Chair Professorships, started new disciplines like Liberal Arts, Biomedical Sciences; restructured and strengthened research programs, introduced new integrated MBA-PhD, MSc-PhD, M.Tech-PhD programs with 50 research Fellowships from University funds, established Research Innovation Council Chaired by Dr RA Mashelkar, established three strategic research clusters in engineering, biomedical sciences, humanities along with high level scientific advisory committees, attempted to restructure Board of Management and Academic Council with eminent people like Dr Vijay Kelkar, Dr SC Vats, Dr Madhav Deo, Dr Sanjay Dhande, Dr Anil Sahasrabudhe, Dr Raj Hirwani, Dr Rajas Parchure; established high power committee to 'revisit Symbiosis MBA' chaired by Dr Prakash Apte and Vision 20/20 Committee Chaired by Dr Gururaj Mutalik. Through special efforts he invited reputed Councils like ICMR and industries like L&T to become recognized research centers. He conceptualized and facilitated publication of 'Natures wonders at Symbiosis' – a unique publication covering over 200 plant species from Lavale campus. He ensured monthly meetings of Directors, encouraged ideas like weekly Faculty Club and engaged with them to open minds to promote inter and intra institutional for collaborations. He also tried to streamline the work of BoS, AC and other bodies towards academic excellence including development of benchmarking performance of various Faculties. A prestigious grant from IBM under Shared University Resources to SCMHRD and SCIT is just one of the many examples of significant outcomes. He received overwhelming response from the entire academic fraternity of Symbiosis.

## **V. At University Grants Commission – New Delhi**

As Vice Chairman, he was assigned primary responsibility to initiate implementation of 'Quality Mandate' of the UGC. He worked closely with the then Minister HRD Prakash Javdekar and Secretary Subramaniam. He witnessed and participated in shaping up National Education Policy 2020 (NEP) and worked on five-year vision plan Education Quality Upgradation and Inclusion Program (EQUIP). He closely worked with Dr K. Kasturirangan and many members of the NEP 2020 drafting Committee. He tried to implement several recommendation. This include efforts to move in the direction of student centric system allowing multiple entry multiple exit facility and choice-based credit transferability, and the draft Regulation for Academic Bank of Credit (ABC). Several initiatives were conceptualized to promote student-centric system, encourage liberal interdisciplinary credit system, support transdisciplinary research and strengthen technology enabled learning environment. Within a short time of 15 months, his team successfully completed first phase of ambitious Quality Mandate of the UGC. Ten verticals of quality mandate include implementation of Student Induction Program (Deeksharambha), development of Learning Outcome-based Curriculum Frameworks (LOCF), streamlining MOOCs for SWAYAM, course on life skills and value education (Mulyapravaha). Schemes to strengthen social and industry connect of students have been prepared. A detailed manual of evaluation reforms has been prepared. Faculty induction program (Gurudakshita) is now ready to be implemented which will be helpful for all newly recruited teachers. A novel mentoring program to increase number of accredited institutes (Paramarsh) has been implemented. A book on quality mandate capturing essence of all the verticals has been published by the UGC. He steered a new regulation for deemed to be universities include quality mandate parameters as essential requisites. The new regulations combining existing open distance and online learning education regulations allow students to earn 40% credits from online learning platforms. A project to develop courses to promote critical thinking, design thinking and cognitive abilities among students was conceptualized by him. Worked on novel initiatives 'Semester Outreach Program' (SOP) to offer unique opportunity to students for experiential learning from community and acquire life skills. Indian universities are often criticized for lack of adequate quality research and innovation culture. He conceptualized a new Scheme for Transdisciplinary Research for India's Developing Economy (STRIDE) to build research capacity especially in colleges. STRIDE provides funding for transdisciplinary research that can help Indian society, economy and sustainable development. Substantial grants for high impact, national network research projects in humanities is unique feature of STRIDE. Special emphasis is provided to strengthen research culture, capacity and promote responsible academic conduct. Another new initiative from him at the UGC known as Consortium of Academic and Research Ethics (CARE) has been widely recognized for curbing 'pay and publish trash' culture. Reputed journals like NATURE and Current Science have recognized this effort as an effective measure to control menace of predatory publishers. UGC-CARE Reference List of Quality Journals is now regularly used by Universities and research institutions in India and abroad.