Dilip Venugopal, Ph. D.

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Profile

17 years of professional experiences incorporating multiple disciplines including applied ecology, crop production, geo-statistics and environmental policy.

Expertise in science and technology research - biotechnology assessments and regulations, biofuels and renewable energy, climate change adaptation and mitigation, invasive species control and eradication, biological conservation and restoration, pollution mitigation, integrated pest management, and environmental risk assessments.

Policy professional with expertise leading and coordinating analyses of EPA's climate change, renewable fuels and biotechnology regulatory policies.

Analyst with demonstrated ability to critically evaluate scientific literature, synthesize findings, and effectively communicate complex concepts to technical and non-technical audiences.

Skilled in partnership-building, coordination, grant writing and reviewing, strategic thinking, and liaising effectively with internal and external stakeholders.

Strong quantitative analytical skills and data management skills including database management, geographical information systems and remote sensing, programming and coding, data manipulation and visualization, and complex statistical analysis.

International work experiences in diverse ethnic, linguistic and cultural contexts across national and international organizations including governmental, non-governmental, and academic institutions of three countries (United States, India, and France).

Academic training

Doctor of Philosophy	Entomology Dissertation - "*Spatial heterogeneity of stink bugs in agricultural systems*"	University of Maryland, College Park, USA	2014
Master of Science	Ecology Thesis - "*Thermoregulatory behaviour of freshwater crocodiles*"	Pondicherry University, Puducherry, India	2001
Bachelor of Science	Major - Zoology Ancillary - Chemistry and Botany	University of Madras, Chennai, India	1998

Awards

International Integrated Pest Management Award of Recognition - StopBMSB program.

Excellence in Extension and Outreach Award - Dept. of Entomology, Univ. of Maryland.

Professional experience

AAAS Science & Technology Policy Fellow September 2015 - Current
Transportation & Climate Division, Office of Transportation & Air Quality

U.S. Environmental Protection Agency

Renewable energy and biofuels policy analysis and verification, policy development and presentation (position papers, briefing packages) to agency leadership and senior leadership team.

Scientific and policy lead (international, and invasive species impacts), and contributing author (land use impacts , biodiversity and ecosystem health impacts, and drivers of environmental impacts) on EPA's Report to Congress

Analyze land use land cover change, determine green house gas emissions *vis-a-vis* crop extent and intensification for bio-fuel feedstock.

Coordinate inter-agency (EPA and DOE) collaboration to update assumptions of pesticide and water usage for life cycle analysis and green house gas calculations for various biofuel pathways.

Provide strategic, analytical and technical inputs to programs and policies reducing greenhouse gases and air pollutants, and improving health and environmental justice as authorized by Clean Air Act.

Analyzed emissions and created remedial scenarios with reference to Volkswagen Clean Air Act violations.

Scientific lead, modeling and mitigating food waste management emissions.

Quantify emission reduction and conduct public health benefits (reduction of developmental, cancer and hazard index risks) analysis for the National Clean Diesel Campaign programs.

Develop analysis and visualizations, and community outreach resources for marine ports and fence-line communities environmental justice issues.

Integrate and analyze population census, air quality, and ship movement and handling data for policy decisions on air quality improvement in port communities.

Curate, ensure data quality, and manage database of diesel emission reduction projects.

Develop and implement scientific products supporting regulatory actions, and managing insect resistance for transgenic field crops containing biological pesticides as authorized by Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), Food Quality Protection Act (FQPA), Toxic Substances Control Act (TSCA), and Federal Food, Drug, and Cosmetic Act (FFDCA).

Documented the field evolved resistance development in corn earworm to multiple Cry proteins Bt corn through field efficacy experiments and laboratory biological assays and experiments.

Analyzed and published the role of climate change and transgenic corn adoption on insect resistance during 1996-2016, and developed biotechnology regulatory policies and actions.

Reviewed grant proposals on climate change and sustainable crop/livestock production, and food processing and food safety for National Academy of Sciences implemented U.S. - Egypt Science and Technology (S&T) Joint Fund.

Research Associate June 2014 - August 2015

Department of Entomology, University of Maryland

Co-Directed a multi-institutional, collaborative $2.7M research project to develop and deliver strategies for managing invasive stink bugs in commercially important agricultural commodities. As a research leader, this included developing networks, partnerships, and cooperative arrangements with various stakeholders including federal agencies, pesticide companies, crop producers, agricultural service company, commercial nurseries and growers, and academics for pest management strategies.

Through multivariate, multi-scale spatial analysis, determined the role of environmental variables (benthic substrate, disease prevalence, water quality parameters and the oyster arrangement) on native oyster populations (*Crassostrea virginica*) and oyster restoration success during 2008-2014 in the Maryland portion of the Chesapeake Bay and its estuaries.

Successfully diagnosed and determined the 'edge-only' insecticidal treatment as a viable stink bug management strategy for soybean, based on insecticide efficacy trials and associated seed damages and yield. This recommendation, currently adopted by mid-Atlantic soybean farmers reduces control costs and field level insecticide input by up to 75 %.

Assessment of transgenic biotechnological (plant incorporated pesticides; e.g *Bacillus thuringiensis* Bt) crop susceptibility and insect resistance management

Monitored and analyzed field evolved resistance development through laboratory bioassays and field experiments in corn earworm to Cry1Ab protein in Bt sweet corn during 1996-2015.

Analyzed role of bioclimate and area-wide Bt corn adoption on the regional spatiotemporal patterns in Lepidopteran insect communities during 1973-2008.

Graduate Research Assistant August 2009 - June 2014
Department of Entomology, University of Maryland

Through multivariate, multi-scale, geospatial analysis, identified the role of bio-climate, topography and landscape on the patterns of stink bug diversity and abundance in mid-Atlantic soybean fields.

Leading a team of 14 undergraduate students and summer interns, designed, planned and executed four research projects across 60 agricultural fields in three sites.

Integrated historical and spatial data on temperature anomaly and date of migratory insect arrival, analyzed and determined the effect of climate change on the arrival date of a migratory agricultural pest, potato leafhopper, and the severity of its infestation.

Conducted ecological risk assessment for plant incorporated insecticidal products on non-target aquatic invertebrates.

Non-target effects of transgenic corn debris in streams, under the regulatory federal statute of National Environmental Policy Act (NEPA).

Development of alternative approaches to estimate toxicity to aquatic life as part of science review improvements for ecological risk assessments under the Pesticide Registration Improvement Act (PRIA).

Identified the role of bio-climate and landscape configuration and composition, for diversity and abundance of stink bugs and beneficial insects (predators, pollinators, and parasitoids) in mid-Atlantic soybean fields.

Delivered short lectures, led discussion groups, oversaw laboratory procedures, graded reports and exams, and addressed concerns for 300 students in four undergraduate biological science courses.

Assistant Engineer March 2008 - June 2009
Dept. of Ecology, *Institut Français de Pondichéry,* Puducherry, India

Managed a spatial database with diversity and richness of 464 tropical tree species across 102 plots spread over 22,000 sq. km in a biodiversity hotspot.

Compiled, interpolated and integrated regional soil and rainfall data to the tree species database

Successfully completed multivariate spatial statistical analysis of soil properties and bio-climate on tree community patterns. Published two journal articles, a book chapter and delivered two presentations on patterns in tropical tree communities and its environment relationships.

Research Associate January 2007 - December 2007
Foundation for Ecological Research, Advocacy & Learning, Puducherry, India

Led a team of 6 members for ₹10 million project on vulnerability and habitat restoration along the Coromandel Coast of India funded by United National Development Program (UNDP).

Designed and executed social and ecological assessments on 64 tropical dry evergreen forest patches and 48 sand dune sites.

Integrated social, ecological and administrative data into a spatial module to prioritize, design and demonstrate coastal ecosystem restoration projects for sand dunes, mangroves and tropical dry evergreen forests.

Developed networks, partnerships, and cooperative arrangements with natural resource management and administrative personnel from multiple state and federal agencies (Tamil Nadu Forest Department, UNDP, Hindu Religious and Charitable Endowments Department) to define scientific goals and develop appropriate strategies and implement coastal ecosystem restoration.

Successfully negotiated restoration strategies at three different sites, with multiple stakeholders including local village government (panchayat), state government authorities and local village community.

With local village community participation, restored over 20 ha of tropical dry evergreen forest through enrichment planting of 8800 saplings of 21 tree species; stabilized 20 ha of sand dunes with 35000 saplings of 9 species.

Developed and implemented a long term program monitoring the restoration success.

Planned, maintained, and tracked budgets for multiple research projects.

Research Associate November 2005 - January 2007
Led a research team with 4 members to identify the role of agroforests in maintaining reptilian diversity including many endangered species.

Using advanced statistical techniques that incorporate detection probability, estimated the population density of three species of agamid lizards in landscape of tropical evergreen forests in a biodiversity hotspot fragmented by agroforestry plantations.

Designed a literature review study on the natural history, distribution, taxonomy and conservation status of Indian lizards. This included developing literature search criteria from online databases and library resources, screening literature search results, evaluation of the study methods and the studies, revising search criteria, study-evaluation criteria, or data-extraction protocols.

Published two refereed journal articles, a book chapter and a newsletter article on natural history, distribution, taxonomy and conservation status of Indian lizards based on literature review.

Research Associate November 2005 - January 2007

Foundation for Ecological Research, Advocacy & Learning, Puducherry, India

Led an 8 member research team, and developed and implemented a long term program monitoring large mammal herbivore populations through detailed budgetary planning and capacity development. This monitoring program is now currently adopted by the Tamil Nadu Forest Department.

Developed networks, partnerships, and cooperative arrangements with natural resource management personnel from state and federal agencies (Tamil Nadu Forest Department, Department of Science and Technology) to define scientific goals and develop appropriate models and analyses for monitoring mammalian herbivore populations.

Mapped the road and paths network in a 905 sq. km. tiger reserve and prepared detailed base maps in English and vernacular Tamil for local government authorities.

Through a combination of field survey and satellite imagery data, identified the site occupancy and preferred habitats of the large mammalian herbivores.

Organized three training workshops and trained volunteers, forest department staff, students and local tribal field assistants (80 pax.) on survey techniques for GPS and large mammalian herbivores.

Technical Assistant February 2002 - December 2003
Wildlife Institute of India, Dehradun, India

Research Assistant February 1999 - June 1999 & December 1999
Wildlife Conservation Society - India / Centre for Wildlife Studies, Bangalore, India

Collected field data and using Distance sampling method, analyzed and estimated the population density of 12 species of large mammals including elephants and Indian bison at six Indian national parks.

Deployed 59 camera trapping units in two national parks and estimated density of large predators including tigers and leopards using mark-recapture technique.

Trained volunteers, forest department staff, students and local tribal field assistants (80 pax.) on survey techniques for GPS and large mammalian herbivores.

Ecologist (Consultant) September 2001 - November 2001
Khandige Herbs and Plantations Pvt. Ltd. Chennai, India

Part of team conducting biodiversity assessments of the flora and fauna of Sirumalai Hills, Tamil Nadu, India.

Faunal surveys included fishes, amphibians, reptiles, small mammals including volants through various techniques including cameta traps, mark-removal and bat surveys.

Volunteer September 1995 - May 1998
Madras Crocodile Bank Trust / Students Sea Turtle Conservation Network

Reptile husbandry and maintenance including crocodile measurements, egg collection, and general pit cleaning.

Data recording for hatching success and morphometrics for different groups of reptiles including snakes, crocodiles and turtles.

Coordinated student participation program during 1996-1997.

Sea turtle nest collection, relocation, and hatchery management.

Research & Outreach, Academic affiliations and activities

Research grants - 8 awarded for $3M as PI/Co-PI; Fellowships and awards - 5 awarded for $27,500

Referee - National Academy of Sciences U.S.- Egypt Partnership Fund (Climate change and agriculture; food safety), Scientific Reports, PLoS ONE, Journal of Economic Entomology, Environmental Entomology, Journal of Pest Science, HortScience, Bulletin of Entomological Research

Publications – 23 refereed articles; 2 book chapters; 2 conference proceedings; 12 non-refereed scientific reports; 2 thesis and dissertation; 10 extension articles including maps and posters

Presentations – 14 conference; 8 invited; 5 extension; 3 training workshops

Member – Entomological Society of America (2012-); Transportation Research Board (2016-); Society for Freshwater Science (2017-); Ecological Society of America (2010); Association for Tropical Biologists (2001 & 2008)

Student Representative, Entomology Faculty Advisory Committee (2010-2011)

Invited Panelist

Integrating science into policy and speaking the language of policy makers. International Association for Landscape Ecologists US (US-IALE) meeting. 11 Apr 2017. Baltimore, MD.

STDs, HIV, Mosquitoes, and Zika (Podcast). Sci on the Fly. American Association for the Advancement of Science. 20 Oct 2016.

Exploring the world of science policy. Rising Environmental Leaders Program, Stanford Woods Institute for the Environment. 25 Mar 2016. Washington DC.

Research and travel grants, and fellowships

Research grants

2015-2016 Co-PI - USDA-NIFA North east regional IPM grant with PI Dr. Kelly Hamby, Co-PI Dr. Cerruti Hooks and collaborators (Joanne Whalen - University of Delaware; Edward Masler - USDA). Multitasking marigold to strengthen organic IPM in lima bean and other bean crops ($25,000).

2014-2016 Co-Project Director - USDA-Speciality Crop Initiative with institutional leader Dr. Cerruti Hooks (UMD) and Project Director Dr. Tracy Leskey (USDA-ARS), Biology, ecology, and management of the brown marmorated stink bug ($750,000 UMD award from overall $2,705,308).

2013-2015 United Soybean Board. Galen Dively (PI), C.R.R. Hooks, A.D. Herbert, J. Whalen & P.D. Venugopal (collaborator). Biology, Distribution, and Management of the Brown Marmorated Stink bug in soybean ($272,669).

2013 USDA-NIFA Sustainable Agriculture Research & Education - Graduate Student Grant. Dilip Venugopal (PI), William Lamp and Galen Dively. Spatial pattern of infestation risk and management of the invasive brown marmorated stink bug in soybeans ($14,956).

2013 Maryland Soybean Board grant. P.D. Venugopal (collaborator) with principal investigator Dr. Galen Dively. Refinement of a visual scouting method and threshold trigger for perimeter treatments to control the brown marmorated stink bug on soybean ($7,566)

2012 Cosmos Club Grant, Dilip Venugopal (PI). Spatio-temporal heterogeneity and management of an invasive agricultural pest ($1,250).

2005-2006 Group for Nature Preservation and Education, Chennai, India. Dilip Venugopal (PI) & N. M Ishwar. Determinants of reptilian diversity in the Anamalai Hills of Western Ghats, India (INR 233,566)

2000 Wildlife Conservation Society – India, Small grants program. Dilip Venugopal (PI). Basking behaviour and survey of marsh crocodiles *Crocodylus palustris* in Ranganthittu Bird Sanctuary, Karnataka, India (INR 25,000).

Fellowships and travel grants

2012-2013 Arthur B. Gahan Fellowship, Dept. of Entomology, Univ. of Maryland ($20,080)

2013 Jacob K. Goldhaber Travel Grant. University of Maryland ($400)

2011 Graduate Student Summer Research Fellowship, University of Maryland ($5000)

2010 Entomology Student Association Travel Grant, University of Maryland ($250)

Analytical, and data management skills

Extensive experience and course work in design, maintenance, and management of general and relational data and databases (Excel, MS Access, Enterprise systems such as Oracle, Structured Query Language - MySQL)

Geographical information systems and remote sensing data management and analysis (ArcGIS, IDRISI, Quantum GIS, GRASS GIS, R, SAS & SPSS)

Programming and coding, data manipulation and visualization (R, Python)

Spatial and statistical analysis, and modeling - multivariate and univariate data, generalized linear models, time series, predictive modeling, non-linear and linear mixed effects modeling, cumulative link models, factor analysis, geospatial statistics (R, ArcGIS, SAS)

Languages

Tamil and English (Native or bilingual proficiency)

Hindi and Kannada (Professional working proficiency; oral and written)

Sanskrit and Malayalam (Limited working proficiency)

Publications (selected)

Google Scholar - https://goo.gl/bTvSOf; **ResearchGate** - https://goo.gl/X27ZK0

Venugopal, P.D and G. P. Dively. 2017. Climate change, transgenic corn adoption, and field-evolved resistance in corn earworm. *Royal Society Open Science 4 (6):17210.*

Venugopal, P.D and G.P. Dively. 2017. Field-evolved resistance in corn earworm to Cry proteins in transgenic corn and its implications. *Information Systems for Biotechnology News Report Feb/Mar 2017: 1-4.*

Dively, G. P., Venugopal, P.D., and C. Finkenbinder. 2016. Field-evolved resistance in corn earworm to Cry proteins expressed by transgenic sweet corn. *PLoS ONE* 11(12):e0169115. (featured in Huffington Post, Phys.org).

Aigner, B. L., Herbert, G. P. D. A., Dively, G., Venugopal, P. D., Whalen, J., Cissel, B., Kuhar, T. P., Brewster, C. C., Hogue, J.W., and E. Seymore. 2016. Comparison of two sampling methods for assessing *Halyomorpha halys* (Hemiptera: Pentatomidae) numbers in soybean fields. *Journal of Economic Entomology* 109 (6): 2586-2589.

Martinson, H.M., Venugopal, P.D. et al. 2016. Invasive stink bug favors naïve plants: Testing the role of plant geographic origin in diverse, managed environments. *Scientific Reports* 6: 32646.

Venugopal, P. D. et al. 2016. Contrasting role of temperature in structuring regional patterns of invasive and native pestilential stink bugs. *PLoS ONE* 11(2): e0150649.

Bergmann, E., Venugopal, P.D., et al. 2016. Host plant use by the invasive *Halyomorpha halys* (Stål) on woody ornamental trees and shrubs. *PLoS ONE* 11(2): e0149975

Venugopal, P.D. et al. 2015. Spatiotemporal dynamics of the invasive *Halyomorpha halys* (Hemiptera: Pentatomidae) in and between adjacent corn and soybean fields. *Journal of Economic Entomology* 108: 2231-2241.

Cissel, W., Venugopal, P.D., et al. 2015. Brown marmorated stink bug - Biology and management in mid-Atlantic soybeans. 10/2015; United Soybean Board.

Baker, M*., Venugopal, P.D*. et al. 2015. Climate change and phenology: *Empoasca fabae* (Hemiptera: Cicadellidae) migration and severity of impact. *PLoS ONE* 10 (5): e0124915 (* co-first author).

Venugopal, P.D*. et al. 2015. Edge effects influence the abundance of the invasive *Halyomorpha halys* (Hemiptera: Pentatomidae) in woody plant nurseries. *Environmental Entomology* 44: 474-479 (* co-first author).

Venugopal, P.D. et al. 2014. Adjacent habitat influence on stink bug (Hemiptera: Pentatomidae) densities and the associated damage at field corn and soybean edges. *PLoS ONE* 9 (10): e109917.

Rice, K., Venugopal, P.D. et al. 2014. Biology, ecology, and management of brown marmorated stink bug (*Halyomorpha halys*). *Journal of Integrated Pest Management* 5 (3): A1-A13.

Venugopal, P.D. 2014. Spatial heterogeneity of stink bugs (Hemiptera: Pentatomidae) in agricultural systems. Ph. D dissertation. University of Maryland, 149 pgs.

Venugopal, P.D. 2013. Agamid lizards of India: Emphasis on distribution and conservation status of endemic and rare species. Pgs 62-75 in Rare animal species of India. Ed. N. Singaravelan. Bentham Science Publishers Ltd.

Venugopal, P.D. 2010. Population density estimates of agamid lizards in human-modified habitats of the Western Ghats, India. *Herpetological Journal* 20(2): 69-76.

Ramesh, B.R., Venugopal, P.D., et al. 2010. Woody species abundances in relation to stand structure and environmental variables across a network of 96 sampling sites in central Western Ghats, Karnataka, India. *Ecology* 91 (10): 3118.

Ramesh, B.R., Venugopal, P.D., at al. 2010. Mesoscale patterns in the floristic composition and structure of forests in Western Ghats, India. *Biotropica* 42(4): 435-443.

Venugopal, P.D. 2010. An updated and annotated list of Indian lizards (Reptilia:Sauria) based on review of distributional records and checklists of Indian reptiles. *Journal of Threatened Taxa* 2(3):728-735.

Venugopal, P.D. et al. 2008. Chapters on restoration of coastal habitats; Pgs.103-117; Pgs.129-158; Pgs.159-177; Pgs.179-199. In Studies on vulnerability and habitat restoration along the Coromandel Coast., eds. Bhalla, R. S., Ram, S., and V. Srinivas. 1st ed. UNDP / UNTRS & FERAL, Pondicherry, India.

Ram. S., Venugopal, P.D. et al. 2006. Estimating herbivore densities in the habitat mosaics of Kalakkad Mundanthurai Tiger Reserve, Tamil Nadu, India. Final Technical Report. Submitted to the Department of Science and Technology, Government of India. FERAL, Pondicherry. 58 p.

Vanak, A. T., Venugopal, P. D et al. 2001. Inventory of the fauna and flora of the Khandige Estate, Sirumalai hills, Tamil Nadu. Consultancy report, Khandige Herbs and Plantations Pvt. Ltd. Chennai, India.

Extension & Outreach (selected)

Cissel, W., Venugopal, P.D. et al. 2015. Brown marmorated stink bug - Biology and management in mid-Atlantic soybeans. 10/2015; United Soybean Board. (authors listed alphabetically by institution).

CABI. 2014. *Halyomorpha halys* [original text by T.C. Leskey, Venugopal, P.D, et al.]. In: Invasive Species Compendium. Wallingford, UK: CAB International. Available at http://www.cabi.org/isc/datasheet/

Venugopal, P.D. 2012. Research study to understand the factors influencing stink bug abundances in soybean fields may be coming to your farm. Agronomy News 3 (8): 2.

Venugopal, P.D. 2007. Tropical dry evergreen forests of the Coromandel Coast, Tamil Nadu, India (Poster in English and Tamil). UNDP / FERAL.

Venugopal, P.D. 2007. Sand dunes of the Coromandel coast of Tamil Nadu, India (Poster in English and Tamil). UNDP/ FERAL.

Venugopal, P.D. 2006. (Translated to Tamil from English). Principles & Practices of Rainforest restoration in Anamalai Hills, Western Ghats India. Nature Conservation Foundation, Mysore.

Presentations (selected)

VENUGOPAL. P. D. (invited) Managing migratory agricultural pests in a warming world - case studies and challenges. Entomological Society of America, Eastern Branch, New Port, RI, Mar 2017.

VENUGOPAL, P.D. (invited) Biofuel feedstock production and practices: implications for pollinator health. Presented to EPA Pollinator Health task force. Washington, D.C. Dec 2016.

Venugopal, P.D. (invited) Biofuel feedstock production and practices: environmental and ecological concerns. Presented to Senior Leadership Team (Office and Divisional Directors) EPA-OAR-OTAQ. Washington, D.C. Sep 2016.

Venugopal, P.D and Dively, G.P. (invited) Role of Bt adoption and climate change on corn earworm resistance development to Cry1Ab protein in transgenic corn. Presented at Biotechnology seminar series. EPA-OCSPP-OPP-BPPD. Crystal City, VA. Feb 2016.

Venugopal. P.D., et al. (invited) Multiscale spatial analysis to identify landscape correlates of native stink bugs and the invasive stink bug *Halyomorpha halys*. Entomological Society of America Annual Meeting. Portland, Oregon. Nov 2014.

Venugopal P.D., et al. (invited) Influence of landscape factors on brown marmorated stink bug abundance vary with spatial scale. Entomological Society of America, Eastern Branch, Williamsburg, VA, March 2014.

Venugopal, P.D., et al. Impact of the invasive brown marmorated stink bug, *Halyomorpha halys* Stål, on soybean seed quality, yield and delayed senescence. Entomological Society of America Annual Meeting. Portland, Oregon. Nov 2014.

Venugopal, P.D & G.P. Dively. Impact and Management of Brown Marmorated Stink Bug in mid-Atlantic Soybean. Presented at Maryland Soybean board meeting. Feb 2014.

Hooks, C.R.R., P.D. Venugopal and G. Dively. Update on BMSB activity and control in grain crops and soybeans. Fifteenth Annual Maryland Commodity Classic. Centreville MD, July 25, 2013.

Venugopal, P.D, et al. How good are degree day models in predicting large scale abundances of brown marmorated stink bugs? Ento.Soc.Am, Austin TX, Nov 2013.

Venugopal P.D. et al. Spatial pattern of infestation risk and management of the invasive brown marmorated stink bug in corn and soybeans. Ento.Soc.Am. Knoxville TN, Nov 2012.

Venugopal P.D. et al. Predicting brown marmorated stink bug *Halyomorpha halys* densities in corn fields based on landscape and environmental influences. Presented at Maryland Grain Producers Utlilization board, Jan 2012, Grasonville, MD.

Venugopal, P.D. et al. Influence of environment and disturbance on the patterns of plant species diversity in Western Ghats, India. 95th Annual ESA meeting. Pittsburgh PA, Aug 2010.

Venugopal, P.D. (invited) Reptilian diversity along Chalakudy river basin. Workshop on biodiversity significance of Chalakudy river basin. Thrissur, Kerala, India, Jun. 2007.