

G. P. PATIL

Principal Investigator/Project Director (PI/PD)

Webpage: <http://www.stat.psu.edu/~gpp>

a. Professional Preparation

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|---------------------------------|---------------------|-------------------|
| 1. University of Michigan | Mathematics | Ph.D. 1959 |
| 2. Indian Statistical Institute | Statistics | D.Sc. 1975* |
| 3. University of Parma, Italy | Biological Sciences | Hon.D.Sc. 1988+ |
| 4. University of Poona, India | Letters | Hon.D.Litt 1989++ |

* For the quality and quantity of research in theoretical and applied statistics.

+ For the founding father of statistical ecology and ecological statistics.

++ For the founder of statistical ecology and pioneer of environmental statistics.

b. Appointments

(i) Academic Appointments:

Visiting Professor of Biostatistics, Harvard School of Public Health, 1986 - 1988.

Visiting Research Professor of Regional Policy, Center for Policy Research, New Delhi, India, 1998-1999.

Distinguished Professor of Mathematical Statistics at Penn State, 1990 - .

Director, Penn State Center for Statistical Ecology and Environmental Statistics, 1984 - .

Distinguished Lukacs Professor, Bowling Green, 1999. After C.R. Rao, 1998.

Visiting Professor, New South Wales, Australia, 1967. Together with Sir D. R. Cox.

Professor of Mathematical Statistics at Penn State, 1964 - 1990.

ii) Professional Appointments:

A fellow of the Institute of Mathematical Statistics, American Statistical Association (ASA), American Association of the Advancement of Science, International Statistical Institute, National Institute of Ecology, India. A founder of the statistical ecology sections of International Association for Ecology and the Ecological Society of America, and of the Statistics and the Environment Section of the ASA. A past Chair of the Section of Statistics and the Environment of the ASA and the Founder Chair of its Committee on Fellows and Awards. Editor-in-Chief of Environmental and Ecological Statistics and Editorial Advisory Board of *Environmetrics*. A recipient of the most significant paper award of American Fisheries Society, the first distinguished statistical ecologist award of the International Association for Ecology, the ASA Distinguished Achievement Medal for Statistics and the Environment, and the best paper award of the American Water Resources Association. Member, UNEP Science Advisory Board with Nobel Laureate Mario Molina in Chair.

c. Publications (<http://www.stat.psu.edu/~gpp/publicat.htm>)

(i) Five most closely related publications (<http://www.stat.psu.edu/~gpp/newpage11.htm>)

1. Patil, G. P., and Myers, W. L. (1999). Environmental and ecological health assessment of landscapes and watersheds with remote sensing data. *Ecosystem Health*, 5(4), 221—224.
2. Patil, G. P., Johnson, G. D., Myers, W. L., and Taillie, C. (2000). Multiscale statistical approach to critical-area analysis and modeling of watersheds and landscapes. In *Statistics for the 21st Century*, C. R. Rao and G. J. Szekely, eds. Marcel Dekker, Inc., New York. pp. 293-310.
3. Patil, G. P., Myers, W. L., Luo, Z., Johnson G. D., and Taillie, C. (2000). Multiscale assessment of landscapes and watersheds with synoptic multivariate spatial data in environmental and ecological statistics. *Mathematical and Computer Modeling*, 32, 257-272.
4. Patil, G. P., Brooks, R. P., Myers, W. L., Rapport, D. J., and Taillie, C. (2001). Ecosystem health and its measurement at landscape scale: Towards the next generation of quantitative assessments. *Ecosystem Health*, 7(4), 307-316.
5. Patil, G. P., Bishop, J., Myers, W. L., Taillie, C., Vraney, R., and Wardrop, D. H. (2003). Detection and delineation of critical areas using echelons and spatial scan statistics with synoptic cellular data. *Environmental and Ecological Statistics* (to appear).

(ii) Five other significant publications (<http://www.stat.psu.edu/~gpp/newpage11.htm>)

1. Johnson, G. D., Myers, W. L., and Patil, G. P. (2001). Predictability of surface water pollution loading in Pennsylvania using watershed-based landscape measurements. *Journal of the American Water Resources Association*, 37(4), 821—835.
2. Patil, G. P. (2002). Environmental and ecological regional policy research with remote imagery and geospatial information: Issues, approaches, and examples. In *Managing for Healthy Ecosystems*, D. Rapport, et al., eds. CRC Press.
3. Patil, G. P., Brooks, R. P., Myers, W. L., and Taillie, C. (2002). Multiscale advanced raster map analysis system for measuring ecosystem health at landscape scale—A novel synergistic consortium initiative. In *Managing for Healthy Ecosystems*, D. Rapport, et al., eds. CRC Press.
4. Kurihara, K., Myers, W. L., and Patil, G. P. (2003). Cellular Automation of Surface Understanding with Echelon Analysis and Its Applications to Geospatial Change Detection. *Environmental and Ecological Statistics* (to appear).
5. Patil, G. P., Balbus, J., Biging, G., JaJa, J., Myers, W. L., and Taillie, C. (2003). Multiscale Advanced Raster Map Analysis System: Definition, Design and Development. *Environmental and Ecological Statistics* (to appear).

d. Synergistic Activities

Over the past thirty year period, Dr. Patil has been in the forefront of research and outreach in mathematical statistics and stochastics, statistical ecology and environmental statistics. He has served on advisory committees of federal and state agencies and environmental research institutes. For simultaneous integration and transfer of knowledge: (1) Director, First Advanced Institute on Statistical Ecology, 1972, Penn State, NSF; (2) Director, Satellite Program in Statistical Ecology, 1977-1978, Berkeley, College Station, Parma, and Jerusalem, Multi-Agency; (3) Principal Lecturer, NSF-CBMS Regional Conference on Diversity Measurement and Comparison, 1986, Oklahoma; (4) Director, Ninth Lukacs Symposium on Synergistic Directions for Statistics, Ecology, Environment, and Society; (5) Science Advisory Board, Spatial Accuracy Symposia; (6) Author of 300 disciplinary and crossdisciplinary research papers. Author and editor of twenty five monographs; (7) has trained and interned 100 graduate students and visiting scholars. For creation of knowledge: (1) PI, USAFOSR and USFS on signal detection and statistical distributions in scientific work, 1960-1980; (2) PI, NMFS on recruitment distributions in fisheries, 1976-1986; (3) PI, NOAA on crystal cube for coastal and estuarine degradation, 1980-1984; (4) PI, EPA on environmental sampling and observational economy, 1986-1996; (5) PI, NSF on multiscale assessment, 1995-1999; Publications in *Journal of American Statistical Association*, *Biometrics*, *Landscape Ecology*, *Ecological Modeling*, *Ecosystem Health*, *JAWRA*; (6) Chair and Editor, MARMAP System for Ecosystem Health, International Congress for Ecosystem Health, Sacramento, 1999; (7) Member, Three Nobel Laureate Panel, UNEP Science Advisory Board, 2000; (8) Chair, MARMAP System Partnership, 2000-; (9) Plenary Lecture, MARMAP System, Brazilian Ecological Congress, Porto Allegre, 2001; International Environmetrics Society, Portland, 2001; (10) Chair, Joint Statistical Meetings Invited Session on MARMAP System: Definition, Design, and Development, New York City, 2002; (11) Chair, Ecosystem Health and Its Measurement at Landscape Scale, Conference on Linkages Between Biodiversity, Ecosystem Health, and Human Health, Washington, DC, 2002.

e. Collaborators and Other Affiliations

(i) Collaborators: Robert Brooks, Noel Cressie, J. K. Ghosh, Nan Laird, Marvin Zelen; **(ii) Graduate and Postdoctoral Advisers:** C.C. Craig, P.S. Dwyer, C.R. Rao; **(iii) Thesis Advisor and Postgraduate-Scholar Sponsor:** Graduate Students: Senin Banga, Danila Filipponi, Glen Johnson. Postgraduate Scholars: Luigi Grossi, Polona Kalan, Koji Koriyama, Goran Stahl.