

# Bibliography



# Bibliography

- Adler, F. R. & Nuernberger, B., 1994. Persistence in patchy irregular landscapes. *Theoretical Population Biology*, **45**, 41–75.
- Albano, E. V., 1996a. Branching annihilating Lévy flights: Irreversible phase transitions with long-range exchanges. *Europhysics Letters*, **34**, 97–102.
- Albano, E. V., 1996b. Irreversible phase transitions in contact processes with Lévy exchanges and long-range interactions. *Physical Review E*, **54**, 3436–3441.
- Alonso, D., 2003. *The stochastic nature of ecological interactions: Communities, metapopulations and epidemics*. Ph.D. thesis, Universitat Politècnica de Catalunya.
- Alonso, D. & McKane, A. J., 2002. Extinction dynamics in Mainland-Island Metapopulations: An  $N$ -patch Stochastic Approach. *Bulletin of Mathematical Biology*, **64**, 913–958.
- Anderson, D. J., 1983. Optimal foraging and the traveling salesman. *Theoretical Population Biology*, **24**, 145–159.
- Andrén, H., 1994. Effects of habitat fragmentation on birds and mammals in landscapes with different proportions of suitable habitats: a review. *Oikos*, **71**, 355–366.
- Atkinson, R. P. D., Rhodes, C. J., Macdonald, D. W. & Anderson, R. M., 2002. Scale-free dynamics in the movement patterns of jackals. *Oikos*, **98**, 134–140.
- Austin, D., Bowen, W. D. & McMillan, J. I., 2004. Intraspecific variation in movement patterns: modeling individual behavior in a large marine predator. *Oikos*, **105**, 15–30.
- Axelrod, R., 1997. *The complexity of cooperation: Agent-based models of competition and collaboration*. Princeton University Press, Princeton, NJ.

- Aylor, D. E. & Ferrandino, F. J., 1989. Temporal and spatial development of bean rust epidemics initiated from an inoculum line source. *Phytopathology*, **79**, 146–151.
- Baker, P. J. & Wilson, J. S., 2000. A quantitative technique for the identification of canopy stratification in tropical and temperate forests. *Forest Ecology and Management*, **127**, 77–86.
- Barbault, R. & Sastrapradja, S., 1995. Generation, maintenance and loss of biodiversity. In *Global Biodiversity Assessment*, 193–274. Cambridge University Press, Cambridge.
- Bartumeus, F., Catalan, J., Fulco, U. L., Lyra, M. L. & Viswanathan, G. M., 2002. Optimizing the encounter rate in biological interactions: Lévy vs. Brownian strategies. *Physical Review Letters*, **88**, 097901–0979004; 89:109902(E).
- Bartumeus, F., da Luz, M. G. E., Viswanathan, G. M. & Catalan, J., 2005. Animal search strategies: a quantitative random walk analysis. To be published in *Ecology*.
- Bartumeus, F., Peters, F., Pueyo, S., Marrasé, C. & Catalan, J., 2003. Helical Lévy walks: Adjusting searching statistics to resource availability in microzooplankton. *Proceedings of the National Academy of Sciences*, **100**, 12771–12775.
- Bascompte, J., 2001. Aggregate statistical measures and metapopulation dynamics. *Journal of Theoretical Biology*, **209**, 373–379.
- Bascompte, J. & Solé, R. V., 1996. Habitat fragmentation and extinction thresholds in spatially explicit models. *Journal of Animal Ecology*, **65**, 465–473.
- Bascompte, J. & Solé, R. V., 1998. Effects of habitat destruction in a prey-predator metapopulation model. *Journal of Theoretical Biology*, **195**, 383–393.
- Bascompte, J. & Solé, R. V., eds., 1997. *Modeling spatiotemporal dynamics in ecology*. Springer and Landes Bioscience, Berlin.
- Bascompte, J. & Solé, R. V., 1998. Spatiotemporal patterns in nature. *Trends in Ecology and Evolution*, **13**, 173–174.
- Bascompte, J. & Vilà, C., 1997. Fractals and search paths in mammals. *Landscape Ecology*, **12**, 231–217.

- Batschelet, E., 1981. *Circular statistics in biology*. Academic Press, New York. New York.
- Becker, P., Rabenold, P. E., Idol, J. R. & Smith, A. P., 1988. Water potential gradients for gaps and slopes in a Panamanian tropical moist forest's dry season. *Journal of Tropical Ecology*, **4**, 173–184.
- Begon, M., Harper, J. L. & Townsend, C. R., 1988. *Ecología: individuos, poblaciones y comunidades*. Omega, Barcelona.
- Beissinger, S. R. & Westphal, M. I., 1998. On the use of demographic models of population viability in endangered species management. *Journal of Wildlife Management*, **62**, 821–841.
- Bell, W. J., 1991. *Searching behaviour: The behavioural ecology of finding resources*. Chapman and Hall. Cambridge University Press, Cambridge.
- Benhamou, S., 2004. How to reliably estimate the tortuosity of an animal's path: straightness, sinuosity, or fractal dimension? *Journal of Theoretical Biology*, **229**, 209–220.
- Berg, H., 1983a. *Random walks in biology*. Princeton University Press. Princeton.
- Berg, H. C., 1983b. Movement of self-propelled objects. In *Random walks in biology*, 75–94. Princeton University Press. Princeton.
- Bergman, C., Schaefer, J. A. & Luttich, S. N., 2000. Caribou movement as a correlated random walk. *Oecologia*, **123**, 364–374.
- Bevers, M. & Flather, C., 1999. Numerically exploring habitat fragmentation effects on populations using cell-based coupled map lattices. *Theoretical Population Biology*, **65**, 465–473.
- Bolker, B. M. & Pacala, S. W., 1999. Spatial moment equations for plant competition: understanding spatial strategies and the advantages of short dispersal. *The American Naturalist*, **153**, 572–602.
- Bovet, J. & Bovet, P., 1993. Computer-simulations of rodent homing behaviour, using a probabilistic model. *Journal of Theoretical Biology*, **161**, 145–156.
- Bovet, P. & Benhamou, S., 1988. Spatial analysis of animals' movements using a correlated random walk model. *Journal of Theoretical Biology*, **131**, 419–433.

- Bovet, P. & Benhamou, S., 1991. Optimal sinuosity in central place foraging movements. *Animal Behaviour*, **42**, 57–62.
- Brown, R., 1828. On the existence of active molecules in organic and inorganic bodies. *Philosophical Magazine*, **4**, 162–173.
- Buldyrev, S. V., Havlin, S., Kazakov, A., da Luz, M. G. E., Raposo, E. P. & Stanley, H. E., 2001. Average time spent by Lévy flights and walks on an interval with absorbing boundaries. *Physical Review E*, **64**, 041108.
- Bullock, J. M., Kenward, R. E. & Hails, R. S., eds., 2002. *Dispersal ecology*. Blackwell Publishing. Cambridge University Press, Cambridge.
- Bunn, A. G., Urban, D. L. & T. K., 2000. Landscape Connectivity: a Conservation Application of Graph Theory. *Journal of Environmental Management*, **59**, 265–278.
- Byers, J. A., 2001. Correlated random walk equations of animal dispersal resolved by simulation. *Ecology*, **82**, 1680–1690.
- Cachon, M., Cosson, J., Cosson, M. P., Huitorel, P. & Cachon, J., 1988. Ultrastructure of the flagellar apparatus of *Oxyrrhis marina*. *Biology of the Cell*, **63**, 159–168.
- Cain, M. L., 1985. Random search by herbivorous insects in a simulation model. *Ecology*, **66**, 876–888.
- Cardy, J. & Täuber, U. C., 1996. Theory of branching and annihilating random walks. *Physical Review Letters*, **77**, 4780–4784.
- Catalan, F., 1999. Small-scale hydrodynamics as a framework for plankton evolution. *The Japanese Journal of Limnology*, **60**, 469–494.
- Champagne, L., Carl, R. G. & Hill, R., 2003. In S. Chick, P. Sánchez, D. Ferrin & M. D.J., eds., *Search Theory, agent-based simulation, and U-boats in the bay of Biscay*, 991–998. Proceedings of the 2003 Winter Simulation Conference.
- Chatfield, C., 1984. *The analysis of time series: an introduction*. Chapman and Hall, London., 3rd ed.
- Chesson, P. & Pantastico-Caldas, M., 1994. The forest architecture hypothesis for diversity maintenance. *Trends in Ecology and Evolution*, **9**, 79–80.

- Cole, B. J., 1995. Fractal time in animal behaviour: The movement activity of *Drosophila*. *Animal Behaviour*, **50**, 1317–1324.
- Condit, R., 1998. *Tropical forest census plot*. Springer-Verlag, Berlin.
- Cosson, J., Cachon, M., Cachon, J. & Cosson, M. P., 1988. Swimming behaviour of the unicellular flagellate *Oxyrrhis marina*: in vivo and in vitro movement of the two flagella. *Biology of the Cell*, **63**, 117–126.
- Coughlin, D. J., Strickler, J. R. & Sanderson, B., 1992. Swimming and search behaviour in clownfish, *Amphiprion perideraion*, larvae. *Animal Behaviour*, **44**, 427–440.
- Crenshaw, H. C., Ciampaglio, C. N. & McHenry, M., 2000. Analysis of the three-dimensional trajectories of organisms: estimates of velocity, curvature and torsion from positional information. *The Journal of Experimental Biology*, **203**, 961–982.
- Crist, T. O., Guertin, D. S., Wiens, J. A. & Milne, B. T., 1992. Animal movement in heterogeneous landscapes: an experiment with *Elodes* beetles in shortgrass prairie. *Functional Ecology*, **6**, 536–544.
- da Luz, M., Buldyrev, S., Havlin, S., Raposo, E., Stanley, H. & Viswanathan, G., 2001. Improvements in the statistical approach to random Lévy flight searches. *Physica A*, **295**, 89–92.
- Deksheniekis, M. M., Donaghay, P. L., Sullivan, J. M., Rines, J. E. B., Osborn, T. R. & Twardowski, M. S., 2001. Temporal and spatial occurrence of thin phytoplankton layers in relation to physical processes. *Marine Ecology Progress Series*, **223**, 61–71.
- Denny, M. & Gaines, S., 2002. *Chance in biology: using probability to explore nature*. Princeton University Press, New Jersey.
- Denslow, J., 1987. Tropical rainforest gaps and tree species diversity. *Annual Review of Ecology and Systematics*, **18**, 431–451.
- Dicke, M. & Burrough, P., 1988. Using fractal dimensions for characterizing tortuosity of animal trails. *Physiological Entomology*, **13**, 393–398.
- Dickman, R., 1986. Kinetic phase transitions in a surface-reaction model: a mean-field theory. *Physical Review A*, **34**, 4246–4250.
- Dieckmann, U., Law, R. & Metz, A. J., eds., 2000. *The geometry of ecological interactions: Simplifying spatial complexity*, vol. 1 of *Cambridge Studies in Adaptive Dynamics*. Cambridge University Press, Cambridge.

- Drake, J. B., Dubayah, R. O., Clark, D. B., Knox, R. G., Blair, J. B., Hofton, M. A., Chazdon, R. L., Weishampel, J. F. & Prince, S., 2002. Estimation of tropical forest structural characteristics using large-footprint lidar. *Remote Sensing of Environment*, **79**, 305–319.
- Durrett, R. & Levin, S., 1994. The Importance of Being discrete (and spatial). *Theoretical Population Biology*, **46**, 363–394.
- Dytham, C., 1994. Habitat destruction and competitive coexistence: a cellular model. *Journal of Animal Ecology*, **63**, 490–495.
- Dytham, C., 1995. The effect of habitat destruction pattern on species persistence: a cellular model. *Oikos*, **74**, 340–344.
- Einstein, A., 1905. Über die von der molekularkinetischen Theorie der Wärme geforderte Bewegung von in ruhenden Flüssigkeiten suspendierten Teilchen. *Annals of Physics*, **322**, 549–560.
- Ellner, S. P., 2001. Pair approximation for lattice models with multiple interaction scales. *Journal of Theoretical Biology*, **210**, 435–447.
- Etienne, R. & Nagelkerke, C. J., 2002. Non-equilibria in small metapopulations: Comparing the deterministic levens model with its stochastic counterpart. *Journal of Theoretical Biology*, **219**, 463–478.
- Evans, G. T., 1989. The encounter speed of moving predator and prey. *Journal of Plankton Research*, **11**, 415–417.
- Fahrig, L., 1997. Relative effects of habitat loss and fragmentation on population extinction. *Journal of Wildlife Management*, **61**, 602–610.
- Fahrig, L., 2002. Effects of habitat fragmentation on the extinction threshold: a synthesis. *Ecological Applications*, **12**, 346–353.
- Fahrig, L., 2003. Effects of habitat fragmentation on biodiversity. *Annual Review of Ecology, Evolution, and Systematics*, **34**, 487–515.
- Feder, J., 1988. *Fractals*. Plenum Press. New York.
- Feller, W., 1968. *An introduction to probability theory and its applications*. Wiley. New York.
- Feynman, R. P., Leighton, R. B. & Sands, M., 1963. *The Feynman lectures on physics. Volume I*. Addison-Wesley Publishing Company. Massachusetts.

- Filipe, J. A. N. & Gibson, G. J., 1998. Studying and approximating spatio-temporal models for epidemic spread and control. *Philosophical Transactions of the Royal Society of London Series B-Biological Sciences*, **353**, 2153–2162.
- Filipe, J. A. N. & Maule, M. M., 2004. Effects of dispersal mechanisms on spatio-temporal development of epidemics. *Journal of Theoretical Ecology*, **226**, 125–141.
- Fitt, B. D. L. & McCartney, H. A., 1986. Spore dispersal in relation to epidemic models. In K. J. Leonard & W. E. Fry, eds., *Plant Disease and Epidemiology, Population Dynamics and Management*, vol. 1. Macmillan, New York.
- Focardi, S., Marcellini, P. & Montanaro, P., 1996. Do ungulates exhibit a food density threshold? A field study of optimal foraging and movement patterns. *Journal of Animal Ecology*, **65**, 606–620.
- Forman, R. T. T., 1995. *Land mosaics: The ecology of landscapes and regions*. Cambridge University Press, Cambridge.
- Fritz, H., Said, S. & Weimerskirch, H., 2003. Scale-dependent hierarchical adjustments of movement patterns in a long-range foraging seabird. *Proceedings of the Royal Society of London B*, **270**, 1143–1148.
- Frontier, S., 1987. Applications of fractal theory to ecology. In P. Legendre & L. Legendre, eds., *Development in numerical ecology*, vol. 14 of *NATO ASI series*. Springer-Verlag, Berlin.
- Fryer, G., 1957. The feeding mechanism of some freshwater cyclopoid copepods. *Proceedings of the Zoological Society of London*, **129**, 1–25.
- Fulco, U. L., Messias, D. N. & Lyra, M. L., 2001. Critical behavior of a one-dimensional diffusive epidemic process. *Physical Review E*, **63**, 066118.
- Gamarra, J. G. P. & Solé, R. V., 2002. Biomass-diversity responses and spatial dependencies in disturbed tallgrass prairies. *Journal of Theoretical Biology*, **215**, 469–480.
- Garber, P. A., 1988. Foraging decisions during nectar feeding by tamarin monkeys (*Saguinus mystax* and *Saguinus fusicollis*, Callitrichidae, Primates) in Amazonian Peru. *Biotropica*, **20**, 100–106.
- Gardner, R. H., Milne, B. T. & O'Neill, R. V., 1987. Neutral models for the analysis of broad-scale landscape patterns. *Landscape Ecology*, **1**, 19–28.

- Gautestad, A. O. & Mysterud, I., 2005. Intrinsic scaling complexity in animal dispersion and abundance. *The American Naturalist*, **105**, 44–56.
- Gefen, Y., Aharony, A. & Alexander, S., 1983. Anomalous diffusion on percolating clusters. *Physical Review Letters*, **50**, 77–80.
- Gerritsen, J. & Strickler, J., 1977. Encounter probabilities and community structure in zooplankton: a mathematical model. *Journal of the Fisheries Research Board of Canada*, **34**, 73–82.
- Gilbert, L. E., 1980. Food web organization and the conservation of Neotropical diversity. In M. E. Soule & B. A. Wilcox, eds., *Conservation biology*, 11–33. Sinauer Associates. Sunderland, MA.
- Gill, F. B., 1988. Trapline foraging by hermit hummingbirds: competition for an undefended, renewable resource. *Ecology*, **69**, 1933–1942.
- Gillespie, D. T., 1976. A general method for numerically simulating the stochastic time evolution of coupled chemical reactions. *Journal of Computational Physics*, **22**, 403–434.
- Gillespie, D. T., 1977. Exact stochastic simulation of coupled chemical reactions. *Journal of Physical Chemistry*, **81**, 2340–2360.
- Gillespie, D. T., 1992. A rigorous derivation of the chemical master equation. *Physica A*, **188**, 404–425.
- Ginzberg, L. R. & Jensen, C. X. J., 2004. Rules of thumb for judging ecological theories. *Trends in Ecology and Evolution*, **19**, 121–126.
- Gurney, W. S. C. & Nisbet, R. M., 1978. Single-Species Population Fluctuations in Patchy Environments. *The American Naturalist*, **112**, 1075–1090.
- Haefner, J. W. & Crist, T. O., 1994. Spatial model of movement and foraging in harvester ants (*Pogonomyrmex*) (I): The role of memory and communication. *Journal of Theoretical Biology*, **166**, 299–313.
- Haley, K. B. & Stone, L. D., eds., 1980. *Search theory and applications*. New York: Plenum Press.
- Hansen, B., 1994. The size ratio between planktonic predators and their prey. *Limnology and Oceanography*, **41**, 395–403.
- Hanski, I., 1998. Metapopulation dynamics. *Nature*, **396**, 41–49.
- Hanski, I. & Gaggiotti, O. E., 2004. *Ecology, genetics, and evolution of metapopulations*. Elsevier Academic Press, Oxford.

- Hanski, I., Moilanen, A. & Gyllenberg, M., 1996. Minimum Viable Metapopulation Size. *The American Naturalist*, **147**, 527–541.
- Hanski, I. & Ovaskainen, O., 2000. The metapopulation capacity of a fragmented landscape. *Nature*, **404**, 755–758.
- Hanski, I. & Ovaskainen, O., 2002. Extinction debt and extinction threshold. *Conservation Biology*, **16**, 666–673.
- Hanski, I. & Simberloff, D., 1997. The metapopulation approach, its history, conceptual domain and application to conservation. In *Metapopulation Biology: Ecology, Genetics and Evolution*, 5–26. Academic Press, London.
- Hansson, L., 1991. Dispersal and connectivity in metapopulations. *Biological Journal of the Linnean Society*, **42**, 89–103.
- Hansson, L., Fahrig, L. & Merriam, G., eds., 1995. *Mosaic landscape and ecological processes*. Chapman & Hall, London.
- Harada, Y., Ezoe, H., Iwasa, Y., Matsuda, H. & K.Sato, 1995. Population persistence and spatially limited social interaction. *Theoretical Population Biology*, **48**, 65–91.
- Harada, Y. & Iwasa, Y., 1994. Lattice population dynamics for plants with dispersing seeds and vegetative propagation. *Researches on Population Ecology*, **36**, 237–249.
- Harnos, A., Horváth, G., Lawrence, A. B. & Vattay, G., 2000. Scaling and intermittence in animal behaviour. *Physica A*, **286**, 312–320.
- Hauser, D. C., Levandowsky, M. & Glassgold, J. M., 1975. Ultrasensitive chemosensory responses by a protozoan to epinephrine and other neurochemicals. *Science*, **190**, 285–286.
- Heinrich, B., 1979. Resource heterogeneity and patterns of movement in foraging bumblebees. *Oecologia*, **40**, 235–245.
- Hiebeler, D., 1997. Stochastic spatial models: from simulations to mean field and local structure approximations. *Journal of Theoretical Biology*, **187**, 307–309.
- Hiebeler, D., 2000. Populations on fragmented landscapes with spatially structures heterogeneities: landscape generation and local dispersal. *Ecology*, **81**, 1629–1641.

- Hill, M. F. & Caswell, H., 1999. Habitat fragmentation and extinction thresholds on fractal landscapes. *Ecology Letters*, **2**, 121–127.
- Hill, P. S., 1992. Reconciling aggregation theory with observed vertical fluxes following phytoplankton blooms. *Journal of Geophysics Research*, **97**, 2295–2308.
- Hoffmann, G., 1983a. The random elements in the systematic search behavior of the desert isopod *Hemilepistus reaumuri*. *Behavioural Ecology and Sociobiology*, **13**, 81–92.
- Hoffmann, G., 1983b. The search behavior of the desert isopod *Hemilepistus reaumuri* as compared with a systematic search. *Behavioural Ecology and Sociobiology*, **13**, 93–106.
- Hubbell, S. P., 2001. *The Unified neutral theory of biodiversity and biogeography*. Princeton University Press, Princeton.
- Hubble, S. P. & Foster, R. B., 1986. Canopy gaps and the dynamics of a Neotropical forest. In M. J. Crawley, ed., *Plant Ecology*, 77–96. Blackwell Scientific, Oxford.
- Ives, A. R. & May, R., 1985. Competition within and between species in a patch environment. *Journal of Theoretical Biology*, **115**, 65–92.
- Ives, A. R., Turner, M. G. & Pearson, S. M., 1998. Local explanations of landscape patterns: can analytical approaches approximate simulation models of spatial processes? *Ecosystems*, **1**, 35–51.
- Iwasa, Y., 2000. Lattice-models and pair-approximations in ecology. In *The Geometry of ecological interactions: Simplifying spatial complexity*, Cambridge Studies in Adaptive Dynamics, 227–251. Cambridge University Press, Cambridge.
- Iwasa, Y., Nakamuru, N. & Levin, S. A., 1998. Allelopathy of bacteria in a lattice population: Competition between colicin-sensitive and colicin-producing strains. *Evolutionary Ecology*, **12**, 785–802.
- Jaffard, S., 1999. The multifractal nature of Lévy processes. *Probability theory and related fields*, **114**, 207–227.
- Johnson, A. R., Milne, B. T. & Wiens, J. A., 1992. Diffusion in fractal landscapes: Simulations and experimental studies of tenebrionid beetle movements. *Ecology*, **73**, 1968–1983.

- Johnson, G. D., Tempelman, A. & Patil, G. P., 1995. Fractals based methods in ecology: a review for analysis at multiple scales. *Coenoses*, **10**, 123–131.
- Johst, K., Brandl, R. & Eber, S., 2002. Metapopulation persistence in dynamic landscapes: The role of dispersal distance. *Oikos*, **98**, 263–270.
- Judson, O., 1994. The rise of individual-based model in ecology. *Trends in Ecology and Evolution*, **9**, 9–14.
- Jumars, P. A., 1993a. Encounter rates and functional responses. In *Concepts in biological oceanography: An interdisciplinair primer*, 23–33. Oxford University Press, New York.
- Jumars, P. A., 1993b. Particle dynamics in water column. In *Concepts in biological oceanography: An interdisciplinair primer*, 244–265. Oxford University Press, New York.
- Kamykowski, D., Reed, R. E. & Kirkpatrick, G. J., 1992. Comparison of sinking velocity, swimming velocity, rotation and path characteristics among six marine dinoflagellate species. *Marine Biology*, **113**, 319–328.
- Kareiva, P. M. & Shigesada, N., 1983. Analyzing insect movement as a correlated random walk. *Oecologia*, **56**, 234–238.
- Katori, M., Kizaki, S., Terui, Y. & Kubo, T., 1998. Forest dynamics with canopy gap expansion and stochastic Ising model. *Fractals*, **6**, 81–86.
- Katori, M. & Konno, N., 1991. Upper bounds for survival probability of the contact process. *Journal of Statistical Physics*, **63**, 115–130.
- Keitt, T. H., Urban, D. L. & Milne, B. T., 1997. Detecting critical scales in fragmented landscapes. *Conservation Ecology online*, **1**, 4.
- Keymer, J. E., Marquet, P. A., Velasco-Hernàndez, J. X. & Levin, S. A., 2000. Extinction thresholds and metapopulation persistence in dynamic landscapes. *The American Naturalist*, **156**(3), 478–494.
- Kiorboe, T., 1997. Small-scale turbulence, marine snow formation, and planktivorous feeding. In C. Marrasé, E. Saiz & J. M. Redondo, eds., *Lectures on plankton and turbulence*, vol. 61, 141–158. Scientia Marina. Barcelona.
- Klafter, J., Shlesinger, M. & Zumofen, G., 1996. Beyond brownian motion. *Physics today*, 33–39.

- Klafter, J., White, B. S. & Levandowsky, M., 1989. Microzooplankton feeding behavior and the Lévy walk. In G. Hoffmann & W. Alt, eds., *Biological motion*, 281–296. Springer, Heidelberg.
- Kot, M., Lewis, M. A. & van den Driesche, P., 1996. Dispersal data and the spread of invading organisms. *Ecology*, **77**, 2027–2042.
- Kramer, D. L. & McLaughlin, R. L., 2001. The behavioral ecology of intermittent locomotion. *American Zoologist*, **41**, 137–153.
- Krebs, J. R. & Davis, N. B., 1993. *An introduction to behavioural ecology*. Blackwell Scientific Publications, Oxford.
- Kubo, T., Iwasa, Y. & Furumoto, N., 1996. Forest spatial dynamics with gap expansion: total gap area and gap size distribution. *Journal of Theoretical Biology*, **180**, 229–246.
- Lande, R., 1987. Extinction thresholds in demographic models of territorial populations. *The American Naturalist*, **130**, 624–635.
- Lande, R., 1988. Demographic models of the northern spotted owl (*Strix occidentalis caurina*). *Oecologia*, **75**, 601–607.
- Law, R., Murrel, D. J. & Dieckmann, U., 2003. Population growth in space and time: spatial logistic equations. *Ecology*, **84**(1), 252–262.
- Lawler, E. L. & Rinnooy Kan, A., 1985. *The Travelling salesman problem: A guided tour of combinatorial optimization*. John & Wiley Sons, New York.
- Lawton, L., Nee, S., Letcher, A. J. & Harvey, P. H., 1994. Animal distributions patterns and processes. In P. J. Edwards, R. M. May & N. R. Webb, eds., *Large scale ecology and conservation biology*. Blackwell, Oxford.
- Leal, M. P., Rodriguez-Robles, J. A. & Losos, J. B., 1998. An experimental study of interspecific interactions between two Puerto Rican Anolis lizards. *Oecologia*, **117**, 273–278.
- Leigh, J. E. G., 1999. *Tropical Forest Ecology: A view from Barro Colorado Island*, chap. *Dramatis personae*, 15–45. Oxford University Press, New York and Oxford.
- Leigh, J. E. G. & Wright, S. J., 1990. Barro Colorado Island and tropical biology. In G. A. H., ed., *Four Neotropical rainforests*, 28–47. Yale University Press, New Haven and London.

- Levandowsky, M. & Kaneta, P. J., 1987. Behaviour in dinoflagellates. In F. J. R. Taylor, ed., *The biology of dinoflagellates*, 360–398. Blackwell Scientific, Oxford.
- Levandowsky, M., Klafter, J. & White, B. S., 1988a. Feeding and swimming behavior in grazing microzooplankton. *Journal of Protozoology*, **35**, 243–246.
- Levandowsky, M., Klafter, J. & White, B. S., 1988b. Swimming behavior and chemosensory responses in the protistan microzooplankton as a function of hydrodynamic regime. *Bulletin of Marine Science*, **43**, 758–763.
- Levandowsky, M., White, B. S. & Schuster, F., 1997. Random movements of soil amoebas. *Acta Protozoologica*, **36**, 237–248.
- Levin, S. A., 1992. The problem of pattern and scale in ecology. *Ecology*, **73**(2), 1943–1967.
- Levin, S. A., 1998. Ecosystems and the biosphere as a complex adaptative system. *Ecosystems*, **1**, 431–436.
- Levin, S. A. & Durrett, R., 1996. From individuals to epidemics. *Philosophical Transactions of the Royal Society, London. Series B*, **351**, 1615–1621.
- Levin, S. A. & Pacala, S. W., 1997. Theories of simplification and scaling of spatially distributed processes. In D. Tilman & P. Kareiva, eds., *Spatial Ecology: the role of space in population dynamcis and inter-specifics interactions*, vol. 30 of *Monographs in Population Biology*, 271–295. Princeton University Press, Princeton, NJ.
- Levins, R., 1969. Some demographic and genetic consequences of environmental heterogeneity for biological control. *Bulletin Entomological Society America*, **15**, 227–240.
- Levins, R., 1970. Extinction. *Lecture Notes on Mathematics*, **2**, 75–107.
- Lévy, P., 1925. *Calcul des probabilités*. Gauthier-Villars, Paris.
- Lévy, P., 1937. *Théorie de l'addition des variables aléatoires*. Gauthier-Villars, Paris.
- Lévy, P., 1948. *Processus stochastiques et mouvement brownien*. Gauthier-Villars, Paris.
- Liggett, T., 1985. *Interacting particle systems*. Springer, New York.

- Lima, S. L. & Zollner, P. A., 1996. Towards a behavioural ecology of ecological landscapes. *Trends in Ecology and Evolution*, **11**, 131–135.
- Loehle, C., Li, B. L. & Sundell, R. C., 1996. Forest spread and phase transitions at forest-prairie ecotones in Kansas. *Landscape Ecology*, **11**, 225–235.
- MacKenzie, B. & Kiorboe, T., 1995. Encounter rates and swimming behaviour of pause-travel and cruise larval fish predators in calm and turbulent laboratory environments. *Limnology and Oceanography*, **40**, 1278–1289.
- Mandelbrot, B., 1977. *Fractals: Form, chance and dimension*. San Francisco, Fremman, W.H and Co.
- Mandelbrot, B. B., 1982. *The Fractal geometry of nature*. Fremman, San Francisco.
- Marell, A., Ball, J. P. & Hofgaard, A., 2002. Foraging movement paths of female reindeer: Insights from fractal analysis, correlated random walks, and Lévy flights. *Canadian Journal of Zoology*, **80**, 854–865.
- Margalef, R., 1977. *Ecología*. Omega. Barcelona.
- Margalef, R., 1980. *La biosfera: entre la termodinámica y el juego*. Omega, Barcelona.
- Margalef, R., 1991. *Teoría de los sistemas ecológicos*. Universisad de Barcelona, Barcelona.
- Marro, J. & Dickman, R., 1999. *Nonequilibrium phase transitions in lattice systems*. Cambridge University Press, Cambridge.
- Matsuda, H., 1987. Condition for the evolution of altruism. In Y. Ito, J. Brown & J. Kikkawa, eds., *Animal Societies: Theories and Facts*, 67–80. Japan Scientific Society Press, Tokyo, Japan.
- Matsuda, H., Tamachi, N., Ogita, N. & Sasaki, A., 1987. A lattice model for population biology. In E. Teramoto & M. Yamaguti, eds., *Mathematical topics in biology: Lecture notes in biomathematics*, vol. 71, 154–161. Springer, New York.
- Matsuda, H. N., Ogita, A., Sasaki, A. & Sato, K., 1992. Statistical mechanics of population: The lattice Lotka-Volterra model. *Progress in Theoretical Physics*, **88**, 1035–1049.

- McKane, A., Alonso, D. & Solé, R. V., 2000. A mean field stochastic theory for species rich assembled communities. *Physics Review E*, **62**, 8466–8484.
- Metzler, R. & Klafter, J., 2004. The restaurant at the end of the random walk: recent developments in the description of anomalous transport by fractional dynamics. *Journal of Physics A: Mathematics and General*, **37**, R161–R208.
- Middleton, G. V., Plotnick, R. E. & M., R. D., 1995. *Nonlinear dynamics and fractals: New numerical techniques for sedimentary data*. Society for Sedimentary Geology, Tulsa, OK.
- Mills, L. S. & Allendorf, F. W., 1996. The one-migrant-per-generation rule in conservation and management. *Conservation Biology*, **10**, 1509–1518.
- Milne, B. T., Johnson, A. R., Keitt, T. H., Hatfield, C. A., David, J. & Hraber, P. T., 1996. Detection of critical densities associated with pinon-juniper woodland ecotones. *Ecology*, **77**, 805–821.
- Minogue, K. P., 1986. Disease gradients and the spread of disease. In *Plant disease epidemiology, population dynamics and management*. Macmillan, New York.
- Minogue, K. P. & Fry, W. E., 1983. Models for the spread of disease: model description. *Phytopathology*, **73**, 1173–1176.
- Molino, J. F. & Sabatier, D., 2001. Tree diversity in Tropical Rain Forests: A validation of the intermediate disturbance hypothesis. *Science*, **294**, 1702–1704.
- Mollison, D., 1977. Spatial contact models for ecological and epidemic spread. *Journal of the Royal Statistical Society B*, **39**, 283–326.
- Montroll, E. W. & Lebowitz, J. L., eds., 2002. *Fluctuation phenomena*. North-Holland, Amsterdam.
- Murray, A. & Jackson, G., 1992. Viral dynamics: a model of the effects of size, shape, motion and abundance of single-celled planktonic organisms and other particles. *Marine Ecology Progress Series*, **89**, 103–116.
- Nakamaru, M., Matsuda, H. & Iwasa, Y., 1997. The evolution of cooperation in a lattice-structured population. *Journal of Theoretical Biology*, **184**, 65–81.

- Nakamaru, M., Nogami, H. & Iwasa, Y., 1998. Score dependent fertility model for the evolution of cooperation in a lattice. *Journal of Theoretical Biology*, **194**, 101–124.
- Nakao, H., 2000. Multi-scaling properties of truncated Lévy-flights. *Physics Letters A*, **266**, 282–289.
- Nams, V. O., 1996. The VFRACTAL: a new estimator for fractal dimension of animal movement paths. *Landscape Ecology*, **11**, 289–297.
- Nottingham, S. F., 1988. Host-plant finding for oviposition by adult cabbage root fly, *Delia radicum*. *Journal of Insect Physiology*, **34**, 227–234.
- O'Brien, W. J., Brownman, H. I. & Evans, B. I., 1990. Search strategies of foraging animals. *American Scientist*, **78**, 152–160.
- Okubo, A., 1980. *Diffusion and ecological problems: Mathematical models*, vol. 10 of *Biomathematics*. Springer-Verlag, Berlin Heidelberg New York.
- O'Neill, R. V., Milne, B. T., Turner, M. G. & Gardner, R. H., 1988. Resource utilization scale and landscape pattern. *Landscape Ecology*, **2**, 63–69.
- Ovaskainen, O. & Hanski, I., 2001. Spatially structured metapopulation models: global and local assessment of metapopulation capacity. *Theoretical Population Biology*, **60**, 281–302.
- Ovaskainen, O. & Hanski, I., 2002. Transient dynamics in metapopulation response to perturbation. *Theoretical Population Biology*, **61**, 285–295.
- Ovaskainen, O., Sato, K., Bascompte, J. & Hanski, I., 2002. Metapopulation models for extinction thresholds in spatially correlated landscapes. *Journal of Theoretical Biology*, **215**, 95–108.
- Pacala, S. W. & Levin, S. A., 1997. Biologically generated spatial pattern and the coexistence of competing species. In D. Tilman & P. Kareiva, eds., *Spatial ecology: the role of space in population dynamics and interspecifics interactions*, vol. 30 of *Monographs in Population Biology*, 204–232. Princeton University Press, Princeton, NJ.
- Parker, G. G., 1995. Structure and microclimate of forest canopies. In M. Lowman & N. Nadkarni, eds., *Forest canopies: a review of research on a biological frontier*, 73–106. Academic Press, San Diego, California.
- Parker, G. G. & Brown, M. J., 2000. Forest canopy stratification-Is it useful? *The American Naturalist*, **155**, 473–484.

- Pascual, M. & Guichard, F., 2005. Criticality and disturbance in spatial ecological systems. *Trends in Ecology and Evolution*, **20**, 88–95.
- Pastor-Satorras, R. & Vespignani, A., 2001. Epidemic spreading in scale-free networks. *Physical Review Letters*, **86**, 3200–3203.
- Peitgen, H. O., Jürgens, H. & Saupe, D., 1992. *Chaos and Fractals. New frontiers of science..* Springer-Verlag, New York.
- Pelt, R. V. & Franklin, J. F., 2000. Influence of canopy structure on the understory environment in tall, old-growth, conifer forests. *Canadian Journal of Forest Research*, **30**, 1231–1245.
- Pen, I., 2000. Reproductive effort in viscous populations. *Evolution*, **54**, 293–297.
- Peters, F., 1994. Prediction of planktonic protistan grazing rates. *Limnology and Oceanography*, **39**, 195–206.
- Peters, R. H., 1983. *The biological implications of body size.* Cambridge University Press, Cambridge.
- Peterson, I., 1998. *The jungles of randomness: A mathematical safari.* John Wiley & Sons, Inc.
- Porto, M., Urbakh, M. & Klafter, J., 2000. Molecular motor that never steps backwards. *Physical Review Letters*, **85**, 491–494.
- Press, W. H., Teukolsky, S. A., Vetterling, W. T. & Flannery, B. P., 1992. *Numerical recipes in C: The art of scientific computing.* Cambridge University Press, Cambridge.
- Pueyo, S., 2003. *Irreversibility and Criticality in the Biosphere.* Publicacions Universitat de Barcelona. Barcelona.
- Ramos-Fernández, G., Morales, J. L., Miramontes, O., Cocho, G., Larralde, H. & Ayala-Orozco, B., 2004. Lévy walk patterns in the foraging movements of spider monkeys (*Ateles geoffroyi*). *Behavioural Ecology and Sociobiology*, **55**, 223–230.
- Raposo, E. P., Buldyrev, S. V., da Luz, M. G. E., Santos, M. C., Stanley, H. E. & Viswanathan, G. M., 2003. Dynamical robustness of Lévy search strategies. *Physical Review Letters*, **91**, 2–4.
- Reagan, D. P., 1992. Congeneric species distribution and abundance in a three-dimensional habitat: the rain forest Anoles of Puerto Rico. *Copeia*, **1992**, 392–403.

- Reagan, D. P. & Waide, R. B., 1996. *The food web of a tropical rainforest..* University of Chicago Press. Chicago, IL.
- Renshaw, E., 1991. *Modelling biological populations in space and time*, vol. 11 of *Cambridge Studies in Mathematical Biology*. Cambridge University Press, Cambridge.
- Ricci, N., 1992. Ethology of ciliates. In K. Hausmann & P. C. Bradbury, eds., *Ciliates: Cells as Organisms*, 403–416. Gustav Fisher. Stuttgart.
- Richards, P. W., 1952. *The Tropical Rain Forest*. Cambridge University Press, London.
- Rothschild, B. & Osborn, T., 1988. Small-scale turbulence and plankton contact rates. *Journal of Plankton Research*, **10**, 465–474.
- Runkle, J. R., 1984. Development of woody vegetation in treefall gaps in a beech-sugar maple forest. *Holarctic Ecology*, **7**, 157–164.
- Santos, M., Raposo, E., Viswanathan, G. M. & da Luz, M. G. E., 2004. Optimal random searches of revisitable targets: Crossover from superdiffusive to ballistic random walk. *Europhysics Letters*, 734–740.
- Satake, A., Iwasa, Y., Hakoyama, H. & Hubbell, S. P., 2004. Estimating local interaction from spatiotemporal forest data, and Monte Carlo bias correction. *Journal of Theoretical Biology*, **226**, 225–235.
- Sato, K. & Iwasa, Y., 2000. Pair-approximations for lattice-based ecological models. In *The geometry of ecological interactions: Simplifying spatial complexity*, 341–358. Cambridge Studies in Adaptive Dynamics. Cambridge University Press, Cambridge.
- Sato, K. & Konno, N., 1995. Successional dynamical models on the 2-dimensional lattice space. *Journal of the Physics Society of Japan*, **64**, 1866–1869.
- Sato, K., Matsuda, H. & Sasaki, A., 1994. Pathogen invasion and host extinction in lattice structured populations. *Journal of Mathematical Biology*, **32**, 251–268.
- Satulovsky, J. & Tomé, T., 1994. Stochastic lattice gas model for a predator-prey system. *Physical Review E*, **49**, 5073–5079.
- Schabetsberger, R. & Jersabeck, C. D., 2004. Shallow males, deep females: sex-biased differences in habitat distribution of the freshwater calanoid copepod *Arctodiaptomus alpinus*. *Ecography*, 506–520.

- Schlicht, R. & Iwasa, Y., 2004. Forest gap dynamics and the Ising model. *Journal of Theoretical Biology*, **230**, 65–75.
- Schmitt, F. G. & Seuront, L., 2001. Multifractal random walk in copepod behavior. *Physica A*, **301**, 375–396.
- Schnitzer, S. A. & Carson, W. P., 2000. Have we missed the forest because of the trees? *Trends in Ecology and Evolution*, **15**, 376–377.
- Schroeder, M., ed., 1991. *Fractals, chaos, power laws: minutes from an infinite paradise*. Freeman and Co., New York.
- Schumaker, N. H., 1996. Using landscape indexes to predict habitat connectivity. *Ecology*, **77**, 1210–1225.
- Seuront, L., Schmitt, F. G., Brewer, M. C., Strickler, J. R. & Sami, S., 2004. From random walk to multifractal random walk in zooplankton swimming behavior. *Zoological Studies*, **43**, 498–510.
- Shelly, T. E., 1984. Comparative foraging behavior of Neotropical robber flies (Diptera: Asilidae). *Oecologia*, **62**, 188–195.
- Shimeta, J., 1993. Diffusional encounter of submicrometer particles and small cells by suspension feeders. *Limnology and Oceanography*, **38**, 456–465.
- Shlesinger, M., Zaslavsky, G. & Frisch, U., eds., 1995. *Lévy flights and related topics in physics*. Springer-Verlag, Berlin.
- Shlesinger, M. F. & Klafter, J., 1986. Lévy walks versus Lévy flights. In H. E. Stanley & N. Ostrowski, eds., *On growth and form*, 279–283. Martinus Nijhof Publishers, Amsterdam.
- Shlesinger, M. F., Zaslavsky, G. & Klafter, J., 1993. Strange kinetics. *Nature*, **363**, 31–37.
- Smith, A. P., 1973. Stratification of temperate and tropical forests. *The American Naturalist*, **107**, 671–682.
- Snyder, R. E. & Nisbet, R. M., 2000. Spatial structure and fluctuations in the contact process and related Models. *Bulletin of Mathematical Biology*, **62**, 959–975.
- Solé, R., Miramontes, O. & Goodwin, B. C., 1993. Oscillations and chaos in ant societies. *Journal of Theoretical Biology*, **161**, 343–357.

- Solé, R. V., 2000. *Signs of life: How complexity pervades biology*, chap. Order, complexity, disorder, 29–59. Basic Books. New York.
- Solé, R. V., Alonso, D. & Saldanya, J., 2004. Habitat fragmentation and biodiversity collapse in neutral communities. *Ecological Complexity*, **1**, 65–75.
- Solé, R. V. & Goodwin, B., eds., 2000. *Signs of life*. Basic Books, New York.
- Solé, R. V. & Manrubia, S. C., 1995. Are rainforests self-organized in a critical state? *Journal of Theoretical Biology*, **173**, 31–40.
- Solé, R. V., Manrubia, S. C., Benton, M., Kauffman, S. & Bak, P., 1999. Criticality and scaling in evolutionary biology. *Trends in Ecology and Evolution*, **14**, 156–160.
- Stauffer, D. & Aharony, A., eds., 1985. *Introduction to percolation theory*. Taylor and Francis, London.
- Stephens, D. W. & Krebs, J. R., 1986. *Foraging theory*. Princeton University Press. Princeton.
- Sugihara, G. & May, R. M., 1990. Applications of fractals in ecology. *Trends in Ecology and Evolution*, **5**, 79–86.
- Takenaka, Y., Matsuda, H. & Iwasa, Y., 1997. Competition and evolutionary stability of plants in a spatially structured habitat. *Resource Population Ecology*, **39**, 67–75.
- Terborgh, J., 1985. The vertical component of plant species diversity in temperate and tropical forests. *The American Naturalist*, **126**, 760–777.
- Terborgh, J., 1992. *Diversity and the tropical rain forest*, chap. Sunlight and stratification, 105–129. Scientific American Library. New York.
- Thomson, J. D., 1996. Trapline foraging by bumble bees: I. Persistence of flight-path geometry. *Behavioral Ecology*, **7**, 158–164.
- Thomson, J. D., Slatkin, M. & Thomson, B. A., 1997. Trapline foraging by bumble bees: II. Definition and detection from sequence data. *Behavioral Ecology*, **8**, 199–210.
- Tilman, D. & Kareiva, P., eds., 1997. *Spatial ecology. The role of space in population dynamics and interspecific interactions*, vol. 30 of *Monographs in Population Biology*. Princeton University Press.

- Tilman, D., May, R. M., Lehman, C. L. & Novak, M. A., 1994. Habitat Destruction and Extinction debt. *Nature*, **371**, 65–66.
- Turchin, P., 1991. Translating foraging movements in heterogeneous environments into the spatial distribution of foragers. *Ecology*, **72**, 1253–1266.
- Turchin, P., 1996. Fractal analyses of movement: a critique. *Ecology*, **77**, 2086–2090.
- Turchin, P., 1998. *Quantitative analysis of movement: Measuring and modelling population redistribution in animal and plants*. Sunderland, MA: Sinauer Associates Inc.
- Turner, M. G., Gardner, R. H. & O'Neill, R. V., 2001. *Landscape ecology in theory and practice: pattern and process*. Springer, New York.
- Vale, R. D. & Milligan, R. A., 2000. The way things move: Looking under the hood of molecular motor proteins. *Science*, **288**, 88–95.
- van Kampen, N. G., 1992. *Stochastic processes in physics and chemistry*. Elsevier, Amsterdam.
- Viswanathan, G., Afanasyev, V., Buldyrev, S., Havlin, S., da Luz, M., Raposo, E. & Stanley, H., 2000. Lévy flights in random searches. *Physica A*, **282**, 1–12.
- Viswanathan, G., Afanasyev, V., Buldyrev, S., Havlin, S., da Luz, M., Raposo, E. & Stanley, H., 2001a. Lévy flights search patterns of biological organisms. *Physica A*, **295**, 85–88.
- Viswanathan, G., Afanasyev, V., S.V., B., Murphy, E., Prince, P. & Stanley, H., 1996. Lévy flights search patterns of wandering albatrosses. *Nature*, **381**, 413–415.
- Viswanathan, G., Buldyrev, S., Havlin, S., da Luz, M., Raposo, E. & Stanley, H., 1999. Optimizing the success of random searches. *Nature*, **401**, 911–914.
- Viswanathan, G. M., 1997. *Analysis of anomalous fluctuations in the dynamics of complex biophysical systems*. Ph.D. thesis, Boston University Graduate School of Arts and Sciences.
- Viswanathan, G. M., Afanasyev, V., V., B. S., Havlin, S., da Luz, M. G. E., Raposo, E. P. & Stanley, H. E., 2001b. Lévy flights search patterns of biological organisms. *Physica A*, **295**, 85–88.

- Viswanathan, G. M., Bartumeus, F., Buldyrev, S. V., Catalan, J., Fulco, U. L., Havlin, S., da Luz, M. G. E., Lyra, M. L., Raposo, E. P. & Stanley, H. E., 2002. Lévy flight random searches in biological phenomena. *Physica A*, **314**, 208–213.
- Voss, R. F., 1989. Random fractals: Self-affinity in noise, music, mountains, and clouds. *Physica D*, **38**, 362–371.
- Weeks, E. & Swinney, H., 1998. Anomalous diffusion resulting from strongly asymmetric random walks. *Physical Review E*, **57**, 4915–4920.
- Weishampel, J. F., Godin, J. R. & Henebry, G. M., 2001. Pantropical dynamics of intact rain forest canopy texture. *Global Ecology and Biogeography*, **10**, 389–398.
- Welden, C. W., Hewett, S. W., Hubbell, S. P. & Foster, R. B., 1991. Survival, growth, and recruitment of saplings in canopy gaps and forest understory on Barro Colorado Island, Panamá. *Ecology*, **72**, 35–50.
- West, B. J., 1996. Fractal statistics: Toward a theory of medicine. In C. A. Pickover, ed., *Fractal Horizons: The Future Use of Fractals*, 263–299. St. Martin's Press. New York.
- Whitmore, T. C., 1988. The influence of tree population dynamics on forest species composition. In A. J. Davy, M. J. Hutchings & A. R. Watkinson, eds., *Population biology of plants*, 271–291. Blackwell. Oxford.
- Whitmore, T. C., 1997. *An introduction to tropical rain forests*. Oxford University Press. Oxford.
- Wiens, J. A., Schooley, R. L. & Weeks Jr., R. D., 1997. Patchy landscapes and animal movement: do beetles percolate? *Oikos*, **78**, 257–264.
- Williams, N. M. & Thomson, J. D., 1998. Trapline foraging by bumble bees: III. Temporal patterns of visitation and foraging success at single plants. *Behavioral Ecology*, **9**, 612–621.
- With, K., 1997. The application of neutral landscape models in conservation biology. *Conservation Biology*, **11**, 1069–1080.
- With, K., 2002. The landscape ecology of invasive spread. *Conservation Biology*, **6**, 1192–1203.
- With, K. & King, A. W., 1999. Extinction thresholds for species in fractal landscapes. *Conservation Biology*, **13**, 314–326.

- With, K. A. & King, A. W., 1999a. Dispersal success on fractal landscapes: A consequence on lacunarity thresholds. *Landscape Ecology*, **14**, 73–82.
- With, K. A. & King, A. W., 1999b. Extinction thresholds for species in fractal landscapes. *Conservation biology*, **13**, 314–326.
- With, K. A. & King, A. W., 2004. The effect of landscape structure on community self-organization and critical biodiversity. *Ecological Modelling*, **179**, 349–366.
- Yamazaki, A. K. & Kamykowski, D., 2000. A dinoflagellate adaptive behaviour model: response to internal biochemical cues. *Ecological Modelling*, **134**, 59–72.
- Zadocks, J. C. & van den Bosch, F., 1984. On the spread of plant disease: a theory on foci. *Annual Review of Phytopathology*, **32**, 503–521.
- Zagt, R. J. & Werger, M. J. A., 1996. Community structure and the demography of primary species in tropical rainforests. In D. M. Newbery, H. H. T. Prins & N. Brown, eds., *Dynamics of tropical communities*, 193–219. Blackwell Science. Oxford.
- Zollner, P. A. & Lima, S. L., 1997. Landscape-level perceptual abilities in white-footed mice: perceptual range and detection of forested habitats. *Animal Behaviour*, **80**, 51–60.
- Zollner, P. A. & Lima, S. L., 1999a. Illumination and the perception of remote habitat patches by white-footed mice. *Animal Behaviour*, **58**, 489–500.
- Zollner, P. A. & Lima, S. L., 1999b. Search strategies for landscape-level interpatch movements. *Ecology*, **80**, 1019–1030.