

## History and Philosophy of Systematic Biology

- Bock, W. J. (1973) Philosophical foundations of classical evolutionary classification Systematic Zoology 22: 375-392 *Part of a general symposium on "Contemporary Systematic Philosophies," there are some other interesting papers here.*
- Brower, A. V. Z. (2000) Evolution Is Not a Necessary Assumption of Cladistics Cladistics 16: 143-154
- Dayrat, Benoit (2005) Ancestor-descendant relationships and the reconstruction of the Tree of Life Paleobiology 31: 347-353
- Donoghue, M.J. and J.W. Kadereit (1992) Walter Zimmermann and the growth of phylogenetic theory Systematic Biology 41: 74-84
- Faith, D. P. and J. W. H. Trueman (2001) Towards an inclusive philosophy for phylogenetic inference Systematic Biology 50: 331-350
- Gaffney, E. S. (1979) An introduction to the logic of phylogeny reconstruction, pp. 79-111 in Cracraft, J. and N. Eldredge (eds.) Phylogenetic Analysis and Paleontology Columbia University Press, New York.
- Gilmour, J. S. L. (1940) Taxonomy and philosophy, pp. 461-474 in J. Huxley (ed.) The New Systematics Oxford
- Hull, D. L. (1978) A matter of individuality Phil. of Science 45: 335-360
- Hull, D. L. (1978) The principles of biological classification: the use and abuse of philosophy
- Hull, D. L. (1984) Cladistic theory: hypotheses that blur and grow, pp. 5-23 in T. Duncan and T. F. Stuessy (eds.) Cladistics: Perspectives on the Reconstruction of Evolutionary History Columbia University Press, New York
- \* Hull, D. L. (1988) Science as a process: an evolutionary account of the social and conceptual development of science University of Chicago Press. *An already classic work on the recent, violent history of systematics; used as data for Hull's general theories about scientific change.*
- Kitts, D. B. (1977) Karl Popper, verifiability, and systematic zoology. Systematic Zoology 26: 185-194
- Kluge, A. G. (1999) The Science of Phylogenetic Systematics: Explanation, Prediction and Test Cladistics 15: 429-436
- Kluge, A. J. (2001) Philosophical conjectures and their refutation Systematic Biology 50: 322-330
- Mayr, E. (1982) The Growth of Biological Thought. Harvard University Press, Cambridge, Mass.
- McKelvey, B. (1982) Organizational Systematics, Univ. of California Press Berkeley
- Mishler, B. D. (1989) Untitled review of Hull, D.L. (1988) Science as a process. Systematic Botany 14: 266-268
- O'Hara, R. J. (1992) Telling the tree: Narrative representation and the study of evolutionary history Biology and Philosophy 7: 135-160
- O'Keefe, F. R. and P. M. Sander (1999) Paleontological paradigms and inferences of phylogenetic pattern: a case study. Paleobiology 25: 518-533
- de Queiroz, K (1987) Systematics and the Darwinian revolution. Philosophy of Science 55: 238-259
- de Queiroz, K. and S. Poe (2001) Philosophy and phylogenetic inference: a comparison of likelihood and parsimony methods in the context of Karl Popper's writings on corroboration. Systematic Biology 50: 305-321
- \*\* Sober, E. (1988) Reconstructing the past, Chapter 1. MIT Press.
- Stevens, P. F. (1994) The development of biological systematics. Columbia University Press, New York.
- Wiley, E. O. (1975) Karl R. Popper, systematics, and classification: a reply to Walter Bock and other evolutionary taxonomists. Systematic Zoology 24: 233-243

- Wiley, E. O. (1981) Phylogenetics: The Theory and Practice of Phylogenetic Systematics.
- Cleland, C. L. (2001) Historical science, experimental science, and the scientific method. *Geology* 29: 987-990
- Hull, D. L. (1974) Philosophy of Biological Sciences. Prentice-Hall, Englewood Cliffs, NJ.
- Hull, D. L. (1999) The use and abuse of Sir Karl Popper. *Biology and Philosophy* 14: 481-504
- Kuhn, T. S. (1970) The Structure of Scientific Revolutions, second edition. University of Chicago Press. *A must-read for any scientist.*
- Laudan, L. (1977) Progress and Its Problems. University of California Press, Berkley.
- Losee, J. (1980) A Historical Introduction to the Philosophy of Science. Second edition. Oxford University Press. *The best single-volume account of changes since Aristotle in how science proceeds -- strongly recommended.*
- Stamos, D. N. (1996) Popper, falsifiability, and evolutionary biology. *Biology and Philosophy* 11: 161-191

### The Hennig Principle

- Ax, P. (1987) The phylogenetic system. John Wiley, Chichester.
- Dupuis, C. (1984) Willi Hennig's impact on taxonomic thought. *Annual Review of Ecology and Systematics* 15: 1-24
- \* Farris J.S. (1983) The logical basis of phylogenetic analysis. pp. 7-36 In N Platnick and V Funk (eds.): *Advances in Cladistics*, Volume 2. NY:Columbia Univ. Press
- Forey, P. L., C. J. Humphries, I. L. Kitching, R. W. Scotland, D. J. Siebert, and D. M. Williams. (1992) *Cladistics*. The Systematics Association Publication No.10, Oxford University Press, New York
- Philippe Grandcolas, P., P. Deleporte, L. Desutter-Grandcolas, and C. Daugeron (2001) Phylogenetics and Ecology: As Many Characters as Possible Should Be Included in the Cladistic Analysis. *Cladistics* 17: 104-110
- \*\* Hennig, W. (1965) Phylogenetic systematics. *Annual Review of Entomology* 10: 97-116
- Hennig, W. (1966) Phylogenetic systematics. University of Illinois Press, Urbana.
- Kitching, I. J., P. L. Forey, C. J. Humphries, and D. M. Williams. (1998) *Cladistics: The Theory and Practice of Parsimony Analysis*. Second Edition. The Systematics Association Publication No. 11 Oxford University Press, Oxford.
- Kluge, A.G. (1994) Moving targets and shell games. *Cladistics* 10: 403-413
- Kluge, A. G. (2001) Parsimony with and without Scientific Justification. *Cladistics* 17: 199-210
- Lundberg, J. G. and L. A. McDade. (1990) Systematics. pp 65-108 in *Methods for Fish Biology*, American Fisheries Society.
- Mishler, B. D. and E. De Luna. (1991) The use of ontogenetic data in phylogenetic analyses of mosses. *Advances in Bryology* 4: 121-167 *Especially pages 129-143*
- Lindberg, D.R. (1992) *Systematic Paleontology*. Pp. 31-37 In: J. H. Lipps, ed. *Fossil Prokaryotes and Protists*, Blackwell Scientific Publications, Ltd., Oxford
- Pol, D. and M. E. Siddall (2001) Biases in Maximum Likelihood and Parsimony: A Simulation Approach to a 10-Taxon Case. *Cladistics* 17: 266-281
- de Queiroz, K. and J. Gauthier (1992) Phylogenetic taxonomy. *Annual Review of Ecology and Systematics* 23: 449-480
- Wilkinson M. (1994) Three-taxon statements - when is a parsimony analysis also a clique analysis. *Cladistics* 10: 221-223

## **Homology**

- Aboitiz, F. (1988) Homology, a comparative or a historical concept? *Acta Biotheoretica* 37: 27-29
- Bang, R., R. DeSalle, and W. Wheeler. (2000) Transformationalism, taxism, and developmental biology in systematics. *Systematic Biology* 49: 19-28
- Callazo, A. (2000) Developmental variation, homology, and the Pharngula stage. *Systematic Biology* 49: 3-18
- Hall, B. K. (ed.). (1994) Homology: the hierarchical basis of comparative biology. Academic Press, San Diego. 483 pp.
- Haszprunar, G. (1992) The types of homology and their significance for evolutionary biology and phylogenetics. *Journal of Evolutionary Biology* 5: 13-24
- Lutzoni, L., P. Wagner, V. Reeb, and S. Zoller (2000) Integrating ambiguously aligned regions of DNA sequences without violating positional homology. *Systematic Biology* 49: 628-651
- Patterson, C (1982) Morphological characters and homology. pp. 21-74 in Josey, K.A. and Friday, A.E. (eds.) *Problems of Phylogenetic Reconstruction*. Academic Press.
- Patterson, C (1988) Homology in classical and molecular biology. *Mol. Biol. Evolution* 5: 603- 625
- Roth, V.L. (1984) On homology *Bioi. J. Linn. Soc.* 22: 13-29
- \*\* Roth, V.L. (1988) The biological basis of homology. In *Ontogeny and Systematics*. Humpries, C.J. (ed.) Columbia University Press, NY.
- Roth, V.L. (1991) Homology and hierarchies: Problems solved and unresolved. *Journal of Evolutionary Biology* 4: 167-194
- Scotland, R. W. (2000) Taxic homology and three-taxon statement analysis. *Systematic Biology* 49: 480-500
- Scotland, R. W. and M. A. Carine (2000) Classification or Phylogenetic Estimates? *Cladistics* 16: 411-419
- Stevens, P.F. (1984) Homology and phylogeny: morphology and systematics. *Systematic Botany* 9: 395-409 *Part of a symposium on homology in botany*
- Wagner, G. P. (1989) The biological homology concept. *Ann. Rev. Ecol. Syst.* 20: 51-69
- Wray, G. A. and C. J. Lowe. (2000) Developmental regulatory genes and echinoderm evolution. *Systematic Biology*. 49: 28-51

## **Characters and states**

- Buschbeck, E. K. (2000) Neurobiological constraints and fly systematics: how different types of neural characters can contribute to a higher level dipteran phylogeny. *Evolution* 54: 888-898
- Chappill, J. A. (1989) Quantitative characters in phylogenetic analysis. *Cladistics* 5: 217-234
- Goldman, N. (1988) Methods of discrete coding of morphological characters for numerical analysis. *Cladistics* 4: 59-71
- Hauser, D. L. and W. Presch. (1991) The effect of ordered characters on phylogenetic reconstruction. *Cladistics* 7: 243-265
- Hibbett, D. S. and M. J. Donoghue (2001) Analysis of character correlations among wood decay mechanisms, mating systems, and substrate ranges in Homobasidiomycetes. *Systematic Biology* 51: 215-242
- Jenner, R. A. (2001) Bilaterian phylogeny and uncritical recycling of morphological data sets. *Systematic Biology* 50: 730-742
- Le Quesne, W. J. (1969) A method of selection of characters in numerical taxonomy. *Systematic Zoology* 18: 201-205

- Lee, D.-C. and H. N. Bryant. (1999) A Reconsideration of the Coding of Inapplicable Characters: Assumptions and Problems. *Cladistics* 15: 373-378
- Lipscomb, D. L. (1992) Parsimony, homology, and the analysis of multistate characters. *Cladistics* 8: 45-65
- Mabee, P. M. (1989a) Assumptions underlying the ontogenetic use sequences for determining character state order. *Trans. Amer. Fish. Soc.* 118: 159-166
- \*\*\* Mishler, B. D. (2005) The logic of the data matrix in phylogenetic analysis. In V.A. Albert (ed.), *Parsimony, Phylogeny, and Genomics*, pp. 57-70. Oxford University Press.  
"
- \*\* Mishler, B. D. and E. De Luna. (1991) The use of ontogenetic data in phylogenetic analyses of mosses. *Advances in Bryology* 4: 121-167
- \* Neff, N.A. (1986) A rational basis for a priori character weighting. *Systematic Zoology* 35: 102-109
- Monteiro, L. R. (2000) Why morphometrics is special: the problem with using partial warps as characters for phylogenetic analysis. *Systematic Biology* 49: 796-800
- O'Keffe, F. R. and P. J. Wagner. (2001) Inferring and testing hypotheses of cladistic character independence by using character compatibility. *Systematic Biology* 50: 657-675
- Pimentel, R.A. and Riggins, R. (1987) The nature of cladistic data. *Cladistics* 3: 201-209
- Pogue, M. G. and M. F. Mickevich. (1990) Character definitions and character state delineation: the bête noire of phylogenetic inference. *Cladistics* 6: 319-361
- Rae, T. C. (1998) The logical basis for the use of continuous characters in phylogenetic systematics." *Cladistics* 14: 221-228
- Schander, C. and P. Sundberg. (2001) Useful characters in gastropod phylogeny: soft information or hard facts? *Systematic Biology* 50: 136-141
- Simmons, M. P. and H. Ochoterena. (2000) Gaps as characters in sequence-based phylogenetic analysis. *Systematic Biology* 49: 369-381
- Simmons, M. P., H. Ochoterena, and T. G. Carr. (2001) Incorporation, relative homoplasy, and effect of gap characters in sequenced-based phylogenetic analysis. *Systematic Biology* 50: 454-461
- Simmons, N. P. (2001) Misleading results from the use of ambiguity coding to score polymorphisms in higher-level taxa. *Systematic Biology* 50: 613-620
- Slowinski, J. B. (1993) Unordered versus "ordered" characters. *Systematic Biology* 42: 155-165
- Smith, E. N. and R. L. Gutberlet jr. (2001) Generalized frequency coding: a method of preparing polymorphic multistate characters for phylogenetic analysis. *Systematic Biology* 51: 156-169
- \* Stevens, P.F. (1991) Character states, morphological variation, and phylogenetic analysis: a review. *Systematic Botany* 16: 553-583
- Strong, E. E. and D. Lipscomb. (1999) Character coding and inapplicable data. *Cladistics* 15: 363-371
- Wagner, P. J. (2000) Exhaustion of morphologic character states among fossil taxa. *Evolution* 54: 365-386
- Wagner, G. P. (ed.). (2001) The character concept in evolutionary biology. Academic Press, San Diego.
- Wagner, P. J. (2000) Exhaustion of morphologic character states among fossil taxa. *Evolution* 54: 365-386
- Wiens, J. J. (1995) Polymorphic characters in phylogenetic systematics. *Systematic Biology* 44: 482-500
- Wiens, J. J. (2001) Character analysis in morphological phylogenetics: problems and solutions. *Systematic Biology* 50: 689-699

Wilkinson, M. (1992) Ordered versus unordered characters. *Cladistics* 8: 375-385

### Character coding

- \* V.A. Albert, B.D. Mishler, and M.W. Chase (1992) Character-state weighting for restriction site data in phylogenetic reconstruction, with an example from chloroplast DNA. In P. Soltis, D. Soltis, and J. Doyle (eds.), *Molecular Systematics of Plants*, pp. 369-403. Chapman and Hall.
- V.A. Albert and B.D. Mishler (1992) On the rationale and utility of weighting nucleotide sequence data. *Cladistics* 8: 73-83
- \*\* V.A. Albert, M.W. Chase, and B.D. Mishler (1993) Character-state weighting for cladistic analysis of protein-coding DNA sequences. *Annals Missouri Botanical Garden* 80: 752-766
- Broughton, R. E., S. E. Stanley, and R. T. Durrett. (2000) Quantification of homoplasy for nucleotide transitions and transversions and a reexamination of assumptions in weighted phylogenetic analysis. *Systematic Biology* 49: 617-627
- Carpenter J.M. (1994) Successive weighting, reliability and evidence. *Cladistics* 10: 215-220
- Farris, J. S. (1969) A successive approximations approach to character weighting. *Systematic Zoology* 18: 374-385
- Freudenstein, J. V., Pickett, K. M., Simmons, M. P. and Wenzel, J. W. (2003) From basepairs to birdsongs: Phylogenetic data in the age of genomics. *Cladistics* 19: 333-347
- Goloboff, P. A. (1993) Estimating character weights during tree searches. *Cladistics* 9: 83-91
- Taran Grant, Arnold G. Kluge (2004) Transformation Series as an Ideographic Character Concept. *Cladistics* 20: 23-31
- Kirchoff, B. K.; Richter, S. J.; Remington, D. L., et al. (2004) Complex data produce better characters. *Systematic Biology* 53: 1-17
- Liebherr, J. K. and Zimmerman, E. C. (1998) Cladistic analysis, phylogeny and biogeography of the Hawaiian Platynin (Coleoptera: Carabidae). *Systematic Entomology* 23: 137-172
- Maddison, W. P. (1993) Missing data versus missing characters in phylogenetic analysis. *Systematic Biology* 42: 576-581
- Nixon K. C. and Davis J. I. (1991) Polymorphic taxa, missing values and cladistic analysis. Presented at: Annual meeting of the Botanical Society of America with the American Institute of Biological Sciences, San Antonio, Texas, USA, AUGUST 4-8. *American Journal of Botany* 78: 206
- Sennblad, B and B. Bremer. (2000) Is ther a justification for differential a priori weighting in coding sequences? A case study from rbcL and Apocynaceae s.l. *Systematic Biology* 49: 101-113
- Wheeler, Q.D. () Character weighting and cladistic analysis. *Systematic Zoology* 35: 110-123
- Whitehead D. R. and Ball G. E. (1975) Classification of the Middle American Genus (Cyrtolaus: Coleoptera: Carabidae pterostichini). *Quaestiones Entomologicae* 11: 591-619
- Wilkinson, M. (1994) Weights and ranks in numerical phylogenetics. *Cladistics* 10: 321-329
- Yeates, D. K. (1995) Groundplans and exemplars: Paths to the tree of life. *Cladistics* 11: 343-357

### Character States & Morphometrics

- Adams, D.C. and M.S. Rosenberg (1998) Partial warps, phylogeny, and ontogeny: A comment on Fink and Zelditch (1995). *Systematic Biology* 47: 168-173
- Arnold, E. N (1990) Why do morphological phylogenies vary in quality? An investigation based on comparative history of lizard clades. *Proceedings of the Royal Society of London B* 240: 135-172

- Bang, R., R. DeSalle, and W. Wheeler (2000) Transformationism, taxism, and developmental biology in systematics. *Systematic Biology* 49:
- Baker, R. H. and Wilkinson, G. S. (2001) Phylogenetic analysis of sexual dimorphism and eye-span allometry in stalk-eyed flies (Diopsidae). *Evolution* 55: 1373-1385
- Bookstein, F. L. (1982) Foundations of morphometrics. *Annual Review of Ecology and Systematics* 13: 451-470
- Bookstein, F. L. (1991) *Morphometric Tools for Landmark Data*. Cambridge University Press.
- Bookstein, F.L. (1998) A hundred years of morphometrics. *Acta Zoologica* 44: 7-59
- Bookstein, F., B. Chernoff, R. Elder, J. Humphries, G. Smith & R. Strauss. (1985) Morphometrics in Evolutionary Biology. Spec. Pub. 15 Acad. Nat. Sci. Philadelphia.
- Briggs, Derek E. G.; Fortey, Richard A. (2005) Wonderful strife: systematics, stem groups, and the phylogenetic signal of the Cambrian radiation. *Paleobiology* 31: 94-112
- Collazo, A. (2000) Developmental variation, homology, and the pharyngula stage. *Systematic Biology* 49: 3-18
- Davis, J. I. (1983) Phenotypic plasticity and the selection of taxonomic characters in *Puccinellia* (Poaceae). *Systematic Botany* 8: 341-353
- Donoghue, M. J., J. A. Doyle, J. Gauthier, A. Kluge and T. Rowe. (1989) The importance of fossils in phylogeny reconstruction. *Annu. Rev. Ecol. Syst.* 20: 431-460
- Duarte, L. C., L. R. Monteiro, F. J. Von Zuben, S. F. Dos Reis. (2000) Variation in mandible shape in *Thrichomys apereoides* (Mammalia: Rodentia): geometric morphometric analysis of a complex morphological Structure. *Systematic Biology* 49: 563-578
- Finarelli, John A.; Clyde, William C. (2004) Reassessing hominoid phylogeny: evaluating congruence in the morphological and temporal data. *Paleobiology* 30: 614-651
- Fink, W. L. (1988) Phylogenetic analysis and the detection of ontogenetic patterns. pp. 71-91 in M. L. McKinney (ed.) *Heterochrony in Evolution*. Plenum Press, New York.
- Fink, W.L. and M.L. Zelditch. (1995) Phylogenetic analysis of ontogenetic shape transformations: a reassessment of the Piranha genus *Pygocentrus* (Teleostei). *Systematic Biology* 44: 343-360
- Fisher, D.C. (1985) Evolutionary morphology: beyond the analogous, the anecdotal, and the ad hoc. *Paleobiology* 11: 120-138
- Gaubert, Philippe; Wozencraft, W. Chris; Cordeiro-Estrela, Pedro, et al. (2005) Mosaics of convergences and noise in morphological phylogenies: What's in a viverrid-like carnivoran? *Systematic Biology* 54: 865-894
- Gauthier, J., A. Kluge and T. Rowe. (1988) Amniote phylogeny and the importance of fossils. *Cladistics* 4: 105-209
- Gibson GD, Gibson AJF. (1900) Heterochrony and the evolution of poecilogony: Generating larval diversity *Evolution* 58: 2704-2717
- Guralnick, R.P. and D.R. Lindberg. (1999) Integrating developmental evolutionary patterns and mechanisms: A case study using the gastropod radula. *Evolution* 53:
- Guralnick, R. P. and D. R. Lindberg. (2001) Reconnecting cell and animal lineages: what do cell lineages tell us about the evolution and development of spiralia? *Evolution* 55: 1501-1519
- Hickman, C.S. (1980) Gastropod radulae and the assessment of form in evolutionary paleontology. *Paleobiology* 6, 276-294:
- Humphries, C. J. (1988) *Ontogeny and systematics*. Columbia University Press, New York.
- Klingenberg, C. P. and L. J. Leamy. (2001) Quantitative genetics of geometric shape in the mouse mandible. *Evolution* 55: 2342-2352
- Kluge, A. G. and R. E. Strauss. (1985) Ontogeny and systematics. *Annual Review of Ecology and Systematics* 16: 247-268

- Kluge, A. J. (1989) A concern for evidence and a phylogenetic hypothesis of relationships among *Epicrates* (Boidae, Serpentes). *Systematic Zoology* 38: 7-25
- Lauder, G. V. (1990) Functional morphology and systematics: studying functional patterns in an historical context. *Annual Review of Ecology and Systematics* 21: 317-340
- Mabee, P. M. (1989) Assumptions underlying the use of ontogenetic sequences for determining character state order. *Trans. Amer. Fish. Soc.* 118: 159-166
- Mabee, P. M., K. L. Olmstead, and C. C. Cubbage. (2000) An experimental study of intraspecific variation, developmental timing, and heterochrony in fishes. *Evolution* 54: 2091-2106
- MacLeod, N. (1999) Generalizing and extending the eigenshape method of shape space visualization and analysis. *Paleobiology* 25: 107-138
- Magwene, P. M. (2001) Comparing ontogenetic trajectories using growth process data. *Systematic Biology* 50: 640-666
- McDade, L. (1990) Hybrids and phylogenetic systematics. I. Patterns of character expression in hybrids and their implications for cladistic analysis. *Evolution* 44: 1685-1700
- Mead, A. J. (2000) Sexual dimorphism and paleoecology in Teloceras, a North American Miocene rhinoceros. *Paleobiology* 26: 689-706
- Muller, M. and Q. C. B. Cronk. (2001) Evolution of a morphological novelty: a phylogenetic analysis of growth patterns in *Streptocarpus* (Gesneriaceae). *Evolution* 55: 918-929
- Monteiro, L. R. (1999) Multivariate regression models and geometric morphometrica: the search for causal factors in the analysis of shape. *Systematic Biology* 48: 192-199
- Monteiro, L. R. (2000) Why morphometrics is special: the problem with using partial warps as characters for phylogenetic inference. *Systematic Biology* 49: 796-799
- Nijhout, H. F. (1990) Metaphors and the role of genes in development. *BioEssays* 12: 441-446
- O'Keefe, F. R., O. Rieppel, and P. M. Sander. (1999) Shape disassociation and inferred heterochrony in a clade of pachypleurosaurs (Reptilia, Sauropterygia). *Paleobiology* 25: 504-517
- Raup, D.M. (1972) Approaches to morphologic analysis. In Schopf, T.J.M. (ed.), *Models in approaches to morphologic analysis*. In Schopf, T.J.M. (ed.), *Models in Paleobiology*, 28044. Freeman, Cooper, San Francisco.
- Renaud, S., M. Benammi, and J.-J.. Jaeger. (1999) Morphological evolution of the murid rodent *Paraethomys* in response to climatic variations (Mio-Liocene of North Africa). *Paleobiology* 25: 369-382
- \*\* Rohlf, F. J. (1990) Morphometrics. *Annual Review of Ecology and Systematics* 21: 29-316
- Rohlf, F.J., A. Loy A, & M. Corti. (1996) Morphometric analysis of old world talpidae (Mammalia, Insectivora) using partial-warp scores. *Systematic Biology* 45: 344-362
- Rohlf, F.J. (1998) On applications of geometric morphometrics to studies of ontogeny and phylogeny. *Systematic Biology* 47: 147-158
- Rohlf, F. J. (2001) Comparative methods for the analysis of continuous variables: geometric interpretations. *Evolution* 55: 2143-2160
- Roth-Nebelsick, A., G. Grimm, V. Mosbrugger, H. Hass, and H. Kerp. (2000) Morphometric analysis of *Rhynia* and *Astroxyylon*: testing functional aspects of early land plant evolution. *Paleobiology* 26: 405-418
- Samadi, S., P. David, and P. Jarne. (2000) Variation of shell shape in the clonal snail *Melanoides tuberculata* and its consequences for the interpretation of fossil series. *Evolution* 54: 492-502
- Slice, D. E. (2001) Landmark coordinates aligned by procrustes analysis do not lie in Kendall's shape space. *Systematic Biology* 50: 141-149
- Smith, E. N. and R. L. Gutberlet. (2001) Generalized frequency coding: a method of preparing polymorphic multistate characters for phylogenetic analysis. *Systematic Biology* 50: 159-169

- Smith, Nathan D., Turner, Alan H. (2005) Morphology's role in phylogeny reconstruction: Perspectives from paleontology. *Systematic Biology* 54: 166-173
- Strauss, R. E. and F. L. Bookstein. (1982) The truss: Body form reconstructions in morphometrics. *Systematic Zoology* 31: 113-135
- Sultan, S. E. (1987) Evolutionary implications of phenotypic plasticity in plants. *Evolutionary Biology* 21: 127-178
- Swiderski, D.L. and M.L. Zelditch. (1998) Why morphometrics is not special: Coding quantitative data for phylogenetic analysis. *Systematic Biology* 47: 508-519
- Thompson, D'A. W. (1942) On growth and form (Complete Revised Edition, 1992: an unabridged and unaltered replica of the 1942 edition, paperback). Dover.
- Walker, J. A. (2000) Ability of geometric morphometric methods to estimate a known covariance matrix *Systematic Biology* 49: 686-696
- Wake, D.B. (1983) Functional and Evolutionary Morphology. 25th Anniv. Issue of Perspectives in Biology and Medicine.
- Webster, Mark; Zelditch, Miriam Leah (2005) Evolutionary modifications of ontogeny: heterochrony and beyond. *Paleobiology* 31: 354-372
- Wiley, E. O. (1981) Phylogenetics: the theory and practice of phylogenetic systematics. John Wiley and Sons, New York.
- \* Wiens, J. J. (2000) Phylogenetic Analysis of Morphological Data. Smithsonian Institution Press, Washington D.C.
- Wiens, J. J. (2001) Character analysis in morphological phylogenetics: problems and solutions. *Systematic Biology* 50: 689-699
- Wiens, John J.; Bonett, Ronald M.; Chippindale, Paul T. (2005) Ontogeny discombobulates phylogeny: Paedomorphosis and higher-level salamander relationships. *Systematic Biology* 54: 91-110
- Wiens, John J. (2004) The role of morphological data in phylogeny reconstruction. *Systematic Biology* 53: 653-661
- Young NM, Hallgrímsson B. (2005) Serial homology and the evolution of mammalian limb covariation structure. *Evolution* 59: 2691-2704
- \*\* Zelditch, M.L., W.L. Fink, and D.L. Swiderski. (1995) Morphometrics, homology, and phylogenetics: quantified characters as synapomorphies. *Systematic Biology* 44: 179-189
- Zelditch, M. L. and W. L. Fink. (1996) Heterochrony and heterotopy: stability and innovation in the evolution of form. *Paleobiology* 22: 241-254
- Zelditch, M.L., W.L. Fink, D.L. Swiderski, and B.L. Lundrigan. (1998) On applications of geometric morphometrics to studies of ontogeny and phylogeny: A reply to Rohlf. *Systematic Biology* 47: 159-167
- Zelditch, M. L. and W. L. Fink. (1998) Partial warps, phylogeny and ontogeny: A reply to Adams and Rosenberg. *Systematic Biology* 47: 345-348
- Zelditch, M. L., H. D. Sheets, and W. L. Fink. (2000) Spatiotemporal reorganization of growth rates in the evolution of ontogeny. *Evolution* 54: 1363-1371

### Molecular data

- Albert, V. A. and B. D. Mishler. (1992) On the rationale and utility of weighting nucleotide sequence data. *Cladistics* 8: 73-83
- Albert, V. A., B. D. Mishler and M. W. Chase. (1992) Character-state weighting for restriction site data in phylogenetic reconstruction, with an example from chloroplast DNA. Pages 369-403

- in Molecular Systematics of Plants (Soltis, P. S., D. E. Soltis and J. J. Doyle, ed.). Chapman & Hall, New York.
- Avise, J. C., J. Arnold, R. M. Ball, E. Bermingham, T. Lamb, J. E. Neigel, C. A. Reeb and N. C. Saunders. (1987) Intraspecific phylogeography: the mitochondrial DNA bridge between population genetics and systematics. *Annual Review of Ecology and Systematics* 18: 489-522
- Avise, J. C. (1989) Gene trees and organismal histories: a phylogenetic approach to population biology. *Evolution* 43: 1192-1208
- Baker, R. H., G. S. Wilkinson, R. DeSalle. (2001) Phylogenetic utility of different types of molecular data used to infer evolutionary relationships among stalk-eyed flies (Diopsidae). *Systematic Biology* 50: 87-105
- Bledsoe, A. H. and R. J. Raikow. (1990) A quantitative assessment of congruence between molecular and nonmolecular estimates of phylogeny. *J. Mol. Evolution* 30: 247-259
- Bremer, K. (1988) The limits of amino acid sequence data in angiosperm phylogenetic reconstruction. *Evolution* 42: 795-803
- Broughton, R. E., S. E. Stanley, and R. T. Durrett. (2000) Quantification of homoplasy for nucleotide transitions and transversions and a reexamination of assumptions in weighted phylogenetic analyses. *Systematic Biology* 49: 617-627
- Brunn, T. D., T. J. White and J. W. Taylor. (1991) Fungal molecular systematics. *Annu. Rev. Ecol. Syst.* 22: 525-564
- Collins, Timothy M.; Fedrigo, Olivier; Naylor, Gavin J. P. (2005) Choosing the best genes for the job: The case for stationary genes in genome-scale phylogenetics. *Systematic Biology* 54: 493-500
- \* Cracraft, J. (1987) DNA hybridization and avian phylogenetics. *Evolutionary Biology* 21: 47-96
- Creer S, Malhotra A, Thorpe RS, et al. (2005) Targeting optimal introns for phylogenetic analyses in non-model taxa: experimental results in Asian pitvipers. *Cladistics* 21: 390-395
- DeBry, R. W. (1999) Maximum likelihood analysis of gene-based and structure-based process partitions, using mammalian mitochondrial genomes. *Systematic Biology* 48: 286-299
- DeSalle, R. and D. A. Grimaldi. (1991) Morphological and molecular systematics of the Drosophilidae. *Annual Review of Ecology and Systematics* 22: 447-475
- \*\* Donoghue, M. J. and M. J. Sanderson. (1992) The suitability of molecular and morphological evidence in reconstructing plant phylogeny. Pages 340-368 in *Molecular Systematics of Plants* (Soltis, P. S., D. E. Soltis and J. J. Doyle, ed.). Chapman & Hall, New York.
- Doyle, J. J. (1992) Gene trees and species trees: molecular systematics as one-character taxonomy. *Systematic Botany* 17: 144-163
- Fleissner, Roland; Metzler, Dirk; Von Haeseler, Arndt. (2005) Simultaneous statistical multiple alignment and phylogeny reconstruction. *Systematic Biology* 54: 548-561
- Giribet G. (2005) Generating implied alignments under direct optimization using POY . *Cladistics* 21: 396-402
- Givnish, T. J. and K. J. Sytsma (1997). Homoplasy in molecular vs. morphological data: the likelihood of correct phylogenetic inference. *Molecular (1997) Evolution and Adaptive Radiation*. (T. J. Givnish and K. J. Sytsma, eds). Cambridge, Cambridge University Press: 55-101
- Hillis, D. M. (1987) Molecular versus morphological approaches to systematics. *Annual Review of Ecology and Systematics* 18: 23-42
- Hillis, D. M., J. J. Bull, M. E. White, M. R. Badgett and I. J. Molineux. (1992) Experimental phylogenetics: generation of a known phylogeny. *Science* 255: 589-592
- Hillis, D.M. (1995) Approaches for assessing phylogenetic accuracy. *Systematic Biology* 44: 39523

- Hillis, D. M., C. Moritz and B. K. Mable (eds.). (1996) Molecular Systematics, second edition. Sinauer, Sunderland, MA. 655 pp.
- Hillis, D. M. and J. J. Wiens. (2000) Molecules versus morphology in systematics: conflicts, artifacts, and misconceptions. pp. 1-19 in J. J. Wiens (ed.), Phylogenetic Analysis of Morphological Data. Washington DC, Smithsonian Institution Press.
- Huelsenbeck, J. P. and R. Nielsen. (1999) Effect of non-independent substitution on phylogenetic accuracy. *Systematic Biology* 49: 317-328
- Laamanen TR, Meier R, Miller MA, et al. (2005) Phylogenetic analysis of *Themira* (Sepsidae:Diptera): sensitivity analysis, alignment, and indel treatment in a multigene study. *Cladistics* 21: 258-271
- Lutzoni, F., P. Wagner, V. Reeb and S. Zoller. (2000) Integrating ambiguously aligned regions of DNA sequences in phylogenetic analyses without violating positional homology. *Systematic Biology* 49: 628-651
- Macey, J. R., J. A. Schulte II, and A. Larson. (2000) Evolution and phylogenetic information content of mitochondrial genomic structural features illustrated with acrodont lizards. *Systematic Biology* 49: 257-277
- Mindell, D. P. and R. L. Honeycutt. (1990) Ribosomal RNA in vertebrates: evolution and phylogenetic applications. *Annual Review of Ecology and Systematics* 21: 541-566
- \*\* Mishler, B. D. (1994) The cladistic analysis of molecular and morphological data. *American Journal of Physical Anthropology* 94: 143-156
- Mishler, B. D., K. Bremer, C. J. Humphries and S. P. Churchill. (1988) The use of nucleic acid sequence data in phylogenetic reconstruction. *Taxon* 37: 391-395
- \* Miyamoto, M. M. and J. Cracraft (eds.). (1991) Phylogenetic analysis of DNA sequences. Oxford University Press, New York. 358 pp.
- Nei, M. and F. Tajima. (1987) Problems arising in phylogenetic inference from restriction-site data. *Mol. Biol. Evolution* 4: 320-323
- Palmer, J. D., R. K. Jansen, H. J. Michaels, M. W. Chase and J. R. Manhart. (1988) Chloroplast DNA variation and plant phylogeny. *Ann. Mo. Bot. Gard.* 75: 1180-1206
- Palmer, J. D. and L. A. Herbon. (1988) Plant mitochondrial DNA evolves rapidly in structure, but slowly in sequence. *J. Mol. Evolution* 28: 87-97
- Patterson, C. (ed.). (1987) Molecules and Morphology in Evolution: Conflict or Compromise. Cambridge Univ. Press, Cambridge.
- Patterson, C., D. M. Williams and C. J. Humphries. (1993) Congruence between molecular and morphological phylogenies. *Annual Review of Ecology and Systematics* 24: 153-188
- Penny, D., M. Hasegawa, P. J. Waddell, and M. D. Hendy. (1999) Mammalian evolution: timing and implications from using the LogDeterminant transform for proteins of differing amino acid composition. *Systematic Biology* 48: 76-93
- Pisani, Davide. (2004) Identifying and removing fast-evolving sites using compatibility analysis: An example from the arthropoda. *Systematic Biology* 53: 978-989
- Posada, D. and K. A. Crandall. (2001) Selecting the best fit model of nucleotide substitution. *Systematic Biology* 50: 580-601
- Saitou, N. and M. Nei. (1987) The neighbor-joining method: a new method for reconstructing phylogenetic trees. *Mol. Biol. Evolution* 4: 406-425
- Sanderson, M. J. and M. J. Donoghue. (1989) Patterns of variation in levels of homoplasy. *Evolution* 43: 1781-1795
- Sarich, V. M., C. W. Schmid and J. Marks. (1989) DNA hybridization as a guide to phylogenies: a critical analysis. *Cladistics* 5: 11749

- Sennblad, B. and B. Bremer. (2000) Is there justification for differential a priori weighting in coding sequences? A case study from *rbcL* abd Apocynaceae s.l. *Systematic Biology* 49: 101-113
- \* Sibley, C. G. and J. E. Ahlquist. (1986) Reconstructing bird phylogeny by comparing DNAs. *Sci. Am.* 254: 82-92
- Simmons, M. P. (2000) A Fundamental Problem with Amino-Acid-Sequence Characters for Phylogenetic Analyses. *Cladistics* 16: 274-282
- Simmons, M. P. and H. Ochoterena. (2000) Gaps as characters in sequence-based phylogenetic analyses. *Systematic Biology* 49: 369-381
- Simmons, M. P., H. Ochoterena, and T. G. Carr. (2001) Incorporation, relative homoplasy, and effect of gap characters in sequence-based phylogenetic analyses. *Systematic Biology* 50: 454-462
- Slowinski, J. B. and B. S. Arbogast. (1999) Is the rate of molecular evolution inversely related to body size? *Systematic Biology* 48: 396-399
- Smith, A. B. (1989) RNA sequence data in phylogenetic reconstruction: testing the limits of its resolution. *Am. J. Bot.* 77: 1176-1187
- Smith, R. L. and K. J. Sytsma. (1990) Evolution of *Populus nigra* (sect. *Aigeiros*): introgressive hybridization and the chloroplast contribution of *Populus alba* (sect. *Populus*). *Am. J. Bot.* 77: 1176-1187
- Springer, M. S., H. M. Amrine, A. Burk, and M. J. Stanhope. (1999) Additional support for Afrotheria and Paenungulata, the performance of mitochondrial versus nuclear genes, and the impact of data partitions with heterogeneous base composition. *Systematic Biology* 48: 65-75
- Steel, M., D. Huson, and P. J. Lockhart. (2000) Invariable sites models and their use in phylogeny reconstruction. *Systematic Biology* 49: 225-232
- Sytsma, K. J., J. F. Smith and L. D. Gottlieb. (1990) Phylogenetics in *Clarkia* (Onagraceae): restriction site mapping of chloroplast DNA. *Systematic Botany* 15: 280-295
- Sytsma, K. J. (1990) DNA and morphology: inference of plant phylogeny. *Trends Ecol. Evolution* 5: 104-110
- Terry MD, Whiting MF. (2005) Comparison of two alignment techniques within a single complex data set: POY versus Clustal. *Cladistics* 21: 272-281
- Van Dijk, M. A. M., E. Paradis, F. Catzefflis, and W. W. De Jong. (1999) The virtues of gaps: Xenarthran (edentate) monophyly supported by a unique deletion in aA-Crystallin. *Systematic Biology* 48: 94-106
- Waddell, P. J., Y. Cao, J. Hauf, M. Hasegawa. (1999) Using novel phylogenetic methods to evaluate mammalian mtDNA, including amino acid-invariant sites-LogDet plus site stripping, to detect internal conflicts in the data, with special reference to the positions of hedgehog, armadillo, and elephant. *Systematic Biology* 48: 31-53
- Wheeler, W. C. (1995) Sequence alignment, parameter sensitivity and the phylogenetic analysis of molecular data. *Systematic Biology* 44: 321-331
- Wheeler, W. C. (2001) Homology and the Optimization of DNA Sequence Data. *Cladistics* 17: S3-S11
- Wilgenbusch, J. and K. deQueiroz. (2000) Phylogenetic relationships among the phrynosomatid sand lizards inferred from mitochondrial DNA sequences generated by heterogeneous evolutionary processes. *Systematic Biology* 49: 592-612
- Xia, X. (2000) Phylogenetic relationship among horseshoe crab species: effect of substitution models on phylogenetic analyses. *Systematic Biology* 49: 87-100
- Yang, Z. (1996) Among-site rate variation and its impact on phylogenetic analyses. *Trends Ecol. Evolution* 11: 367-372

- Zimmer, E. A., R. K. Hamby, M. L. Arnold, D. A. LeBlanc and E. C. Theriot. (1989) Ribosomal RNA phylogenies and flowering plant evolution. pp 205-214 in *The Hierarchy of Life* (Fernholm, B., K. Bremer and H. Jornvall, ed.). Elsevier, Amsterdam. 205-214 in *The Hierarchy of Life* (Fernholm, B., K. Bremer and H. Jornvall, ed.). Elsevier, Amsterdam.
- Zurawski, G. and M. T. Clegg. (1987) Evolution of higher-plant chloroplast DNA-encoded genes: Implications for structure-function and phylogenetic studies. *Ann. Rev. Plant Physiol.* 38: 391-418

### Classification - Basic Principles

- Avise, J.C. and G.C. Johns. (1999) Proposal for a standardized temporal scheme of biological classification for extant species. *PNAS* 96: 7358-7363
- Ax, P. (1987) *The phylogenetic system: The systematization of organisms on the basis of their phylogenesis*. John Wiley & Sons, New York.
- Blackwell, W. H. and M. J. Powell. (1999) Reconciling kingdoms with codes of nomenclature: is it necessary? *Systematic Biology* 48: 406-412
- Bock, W. J. (1977) Foundations and methods of evolutionary classification. Pages 851-895 in *Major patterns in vertebrate evolution* (Hecht, M. K., P. C. Goody and B. M. Hecht, ed.). Plenum, New York.
- \*\* de Queiroz, K. (1988) Systematics and the Darwinian revolution. *Phil. Sci.* 55: 238-259
- Farris, J. S. (1974) Formal definitions of paraphyly and polyphyly. *Systematic Zoology* 23: 548-554
- Hennig, W. (1966) *Phylogenetic systematics*. University of Illinois Press, Urbana.
- Lee, M. S. Y. (2001) Snake origins and the need for scientific agreement on vernacular names. *Paleobiology* 27: 1-6
- Mayr, E. (1998) Two empires or three? *PNAS* 95: 9720-9723
- Nelson, G. (1973) Classification as an expression of phylogenetic relationships. *Systematic Zoology* 22: 344-359
- Padian, K. (1999) Charles Darwin's views of classification in theory and practice. *Systematic Biology* 48: 352-364
- Robeck, H. E., C. C. Maley, and M. J. Donghue. (2000) Taxonomy and temporal diversity patterns. *Paleobiology* 26: 171-187
- Sneath, P. H. A. and R. R. Sokal. (1973) *Numerical taxonomy*. W.H. Freeman, San Francisco.
- Wiley, E. O. (1981) *Phylogenetics: the theory and practice of phylogenetic systematics*. John Wiley and Sons, New York.
- Woese, C.R. (1998) Default taxonomy: Ernst Mayr's view of the microbial world. *P NATL ACAD SCI USA* 95 (19) 11043-11046
- Species Concepts ()
- Aguilar, J. F., J. A. Rossello, and G. N. Feliner. (1999) Molecular evidence for the compilospecies model of reticulate evolution in *Armeria* (Plumbaginaceae). *Systematic Biology* 48: 735-755
- Balakrishnan, Rohini (2005) Species concepts, species boundaries and species identification: A view from the tropics *Systematic Biology* 54: 689-693
- Bremer, K. and H. E. Wanntorp. (1979) Geographic populations or biological species in phylogeny reconstruction? *Systematic Zoology* 28: 220-224
- Brower, A. V. Z. (1999) Delimitation of phylogenetic species with DNA sequences: a critique of Nixon's population aggregation studies. *Systematic Biology* 48: 199-213
- Cantino, P. D., H. N. Bryant, K. de Queiroz, M. J. Donoghue, T. Eriksson, D. M. Hillis, and M. S. Y. Lee. (1999) Species names in phylogenetic nomenclature. *Systematic Biology* 48: 790-808
- Cohan, F. M. (2001) Bacterial species and speciation. *Systematic Biology* 50: 513-524

- Cracraft, J. (1983) Species concepts and speciation analysis. *Curr. Ornith.* 1: 159-187
- Cronquist, A. (1978) Once again, what is a species? Pp. 3-20 in *Biosystematics in agriculture*, ed. J. A. Romberger. Montclair, New Jersey: Allanheld & Osmun.
- Davis, J. I. (1995) Species concepts and phylogenetic analysis -- introduction. *Systematic Botany* 20: 555-559 *Introduction to a symposium -- several relevant papers here*
- Donoghue, M. J. (1985) A critique of the biological species concept and recommendations for a phylogenetic alternative. *Bryologist* 88: 172-181
- Ehrlich, P. R. and P. H. Raven. (1969) Differentiation of populations. *Science* 165: 1228-1232
- Ehrlich, P. R. and R. R. White. (1980) Colorado Checkerspot Butterflies: isolation, neutrality, and the biospecies. *Am. Nat.* 115: 328-341
- Eldredge, N. and J. Cracraft. (1980) *Phylogenetic patterns and the evolutionary process*. New York: Columbia Univ. Press.
- Frost, D. R. and J. W. Wright. (1988) The taxonomy of uniparental species, with special reference to parthenogenetic Cnemidophorus (Squamata: Teiidae). *Systematic Zoology* 37: 200-209
- Frost D.R. and Kluge, A.G.. (1994) A consideration of epistemology in systematic biology, with special reference to species. *Cladistics* 10: 259-294
- Ghiselin, M. T. (1987) Species concepts, individuality, and objectivity. *Biol. Phil.* 2: 127-143
- Goldstein, P. Z. and R. DeSalle. (2000) Phylogenetic Species, Nested Hierarchies, and Character Fixation. *Cladistics* 16: 364-384
- Gould, S. J. (1980) A Quahog is a Quahog. pp 204-213 in *The Pandas Thumb*. Norton.
- Grant, V. (1981) Plant speciation. New York: Columbia Univ. Press.
- Graybeal, A. (1995) Naming species. *Systematic Biology* 44: 237-250
- Holman, E. W. (1987) Recognizability of sexual and asexual species of rotifers. *Systematic Zoology* 36: 381-386
- Hull, D. L. (1987) Genealogical actors in ecological roles. *Biol. Phil.* 2: 168-184
- Lawrence, J. G. (2001) Catalyzing bacterial speciation: correlating lateral transfer with genetic headroom. *Systematic Biology* 50: 479-497
- Phylogenetic Tree Reconstruction ()
- Albert VA, Chase MW, and Mishler BD (1993) Character-state weighting for cladistic analysis of protein-coding DNA sequences. *Ann. Missouri Bot. Gard.* 80: 752-766
- Albert VA, and Mishler BD (1992) On the rationale and utility of weighting nucleotide sequence data. *Cladistics* 8: 73-83
- Albert VA, Mishler BD, and Chase MW (1992) Character-state weighting for restriction site data in phylogenetic reconstruction, with an example from chloroplast DNA. pp. 369-403 in PS Soltis, DE Soltis and JJ Doyle (eds.): *Molecular Systematics of Plants*. New York:Chapman & Hall
- Anderson, J. S. (2001) The phylogenetic trunk: maximal inclusion of missing data in an analysis of the Lepospondyli (Vertebrata, Tetrapoda). *Systematic Biology* 50: 170-193
- Bininda-Emonds, O. R. P., M. J. Sanderson. (2001) Assessment of the accuracy of matrix representation with parsimony analysis supertree construction. *Systematic Biology* 50: 565-579
- Bodenbender, B. E. and D. C. Fisher. (2001) Stratocladistic analysis of blastoid phylogeny. *Journal of Paleontology* 75: 351-369
- Bremer, B., R. K. Jansen, B. Oxelman, M. Backlund, H. Lantz, and K.-J. Kim. (1999) More characters or more taxa for a robust phylogeny – case study from the coffee family (Rubiaceae). *Systematic Biology* 48: 413-435
- Brochu, C. A. (1999) Taxon sampling and reverse successive weighting. *Systematic Biology* 48: 808-814

- Camin, J. H. and R. R. Sokal. (1965) A method for deducing branching sequences in phylogeny. *Evolution* 19: 311-326
- Cavalli-Sforza, L. L. and A. W. F. Edwards. (1967) Phylogenetic analysis: Models and estimation procedures. *Evolution* 32: 550-570
- CLYDE, W. C. AND D. C. FISHER. (1997) Comparing the fit of stratigraphic and morphologic data in phylogenetic analysis. *Paleobiology* 23: 1-19
- Constantinescu, M. and D. Sankoff. (1986) Tree enumeration modulo a consensus. *Journal of Classification* 3: 349-356
- Donoghue, M. J. and W. P. Maddison. (1986) Polarity assessment in phylogenetic systematics: a response to Meacham. *Taxon* 35: 534-545
- Farris, J. S. (1969) A successive approximations approach to character weighting. *Systematic Zoology* 18: 374-385
- Farris, J. S. (1970) Methods for computing Wagner trees. *Systematic Zoology* 19: 83-92
- Farris, J. S. (1972) Estimating phylogenetic trees from distance matrices. *American Naturalist* 106: 645-668
- Farris, J. S. (1977) Phylogenetic analysis under Dollo's Law. *Systematic Zoology* 26: 77-88
- Farris J. S. (1981) Distance data in phylogenetic analysis. pp. 3-23 in VA Funk and DR Brooks (eds.): *Advances in Cladistics: Proceedings of the First Meeting of the Willi Hennig Society*. Bronx, New York:New York Botanical Garden
- Farris, J. S. (1982) Outgroups and parsimony. *Systematic Zoology* 31: 328-334
- Farris J. S. (1983) The logical basis of phylogenetic analysis. pp. 7-36 in N Platnick and V Funk (eds.): *Advances in Cladistics, Volume 2* NY:Columbia Univ. Press.
- Farris, J. S. (1988) Hennig86, version 15 Distributed by the author, Port Jefferson Station, NY.
- Felsenstein, J. (1978) The number of evolutionary trees. *Systematic Zoology* 27: 27-33
- Felsenstein, J. (1978) Cases in which parsimony and compatibility will be positively misleading. *Systematic Zoology* 27: 401-410
- Felsenstein, J. (1984) The statistical approach to inferring phylogeny and what it tells us about parsimony and compatibility. Pages 169-191 in T. Duncan and T. F. Stuessy (ed.), *Cladistics: Perspectives on the Reconstruction of Evolutionary History* (Columbia University Press:
- Fisher, D. C. (1991) Phylogenetic analysis and its application in evolutionary paleobiology. pp 103-121 in *Analytical Paleobiology*.
- Fisher, D. C. (1992) Stratigraphic Parsimony. Pages 124-129 in MacClade: Analysis of Phylogeny and Character Evolution, Version 3 (W. P. Maddison and D. R. Maddison, eds.). Sinauer Associates, Sunderland, MA.
- Fisher, D. C. (1994) Stratocladistics: morphological and temporal patterns and their relation to phylogenetic process. Pages 133-171 in *Interpreting the Hierarchy of Nature – from systematic patterns to evolutionary theories* (L. Grande and O. Rieppel, eds.). Academic Press, S
- Fitch, W. M. (1971) Toward defining the course of evolution: minimal change for a specific tree topology. *Systematic Zoology* 20: 406-416
- Gaffney, E. S. (1979) An introduction to the logic of phylogeny reconstruction. In J Cracraft and N Eldredge (eds.): *Phylogenetic Analysis and Paleontology*. New York:Columbia University Press, pp. 79-111
- Gascuel, O., D. Bryant, and F. Denis. (2001) Strengths and limitations of the minimum evolution principle. *Systematic Biology* 50: 621-627
- Hendy, M. D. and D. Penny. (1982) Branch and bound algorithms to determine minimal evolutionary trees. *Mathematical Biosciences* 59: 277-290

- Hendy, M. D., M. A. Steel, D. Penny, and I. M. Henderson. (1988) Families of trees and consensus. Pages 355-362 in H. H. Bock (ed.), Classification and Related Methods of Data Analysis (Elsevier: Amsterdam).
- Hennig, W. (1966) Phylogenetic Systematics. (University of Illinois Press: Urbana, Illinois).
- Hillis, D. M. (1987) Molecular versus morphological approaches to systematics. Annual Review of Ecology and Systematics 18: 23-42
- Hillis DM, Bull JJ, White ME, Badgett MR, and Molineux IJ. (1992) Experimental phylogenetics: generation of a known phylogeny. *Science* 255: 589-592
- Houseworth, E. A. and E. P. Martins. (2001) Random sampling of constrained phylogenies: conducting phylogenetic analyses when the phylogeny is partially known. *Systematic Biology* 50: 628-639
- Huelsenbeck, J. P. (1995) Performance of phylogenetic methods in simulation. *Systematic Biology* 44: 17-48
- Kim, J. (1996) General inconsistency conditions for maximum parsimony: effects of branch lengths and increasing numbers of taxa. *Systematic Biology* 45: 363-374
- Kitching, I. J., P. L. Forey, C. J. Humphries, and D. M. Williams. (1998) Cladistics: The Theory and Practice of Parsimony Analysis. Second Edition. Oxford, Oxford University Press.
- Kluge, A. G. and J. S. Farris. (1969) Quantitative phyletics and the evolution of anurans. *Systematic Zoology* 18: 1-32
- Kornet, D. J. and H. Turner. (1999) Coding polymorphism for phylogeny reconstruction. *Systematic Biology* 48: 365-379
- Lake, J. A. (1987) Determining evolutionary distances from highly diverged nucleic acid sequences: operator metrics. *J. Mol. Evolution* 26: 59-73
- Lundberg, J. G. (1972) Wagner networks and ancestors. *Systematic Zoology* 21: 398-413
- Maddison, D. R. (1991) The discovery and importance of multiple islands of most-parsimonious trees. *Systematic Zoology* 40: 315-328
- Maddison, W. P. (1989) Reconstructing character evolution on polytomous cladograms. *Cladistics* 5: 365-377
- \*\* Maddison, W. P., and D. R. Maddison. (1992) MacClade: Analysis of Phylogeny and Character Evolution (version 3). Sinauer Associates, Sunderland, MA. Evolution (version 3). Sinauer Associates, Sunderland, MA.:
- Meacham, C. A. (1984) The role of hypothesized direction of characters in the estimation of evolutionary history. *Taxon* 33: 26-38
- Meacham, C. A. (1986) More about directed characters: a reply to Donoghue and Maddison. *Taxon* 35: 538-540
- Mitchell, A., C. Mitter, and J. C. Regier. (2000) More taxa or more characters revisited: combining data from nuclear protein-encoding genes for phylogenetic analyses of Noctuoidea (Insecta: Lepidoptera). *Systematic Biology* 49: 202-224
- Nelson G, and Platnick, N. (1981) Systematics and Biogeography, Cladistics and Vicariance. New York: Columbia Univ. Press.
- O'Keefe, F. R. and P. M. Sander. (1999) Paleontological paradigms and inferences of phylogenetic pattern: a case study. *Paleobiology* 25: 518-533
- Page, R. D. M. (1989) Comments on component-compatibility in historical biogeography. *Cladistics* 5: 167-182
- Penny, D. and M. D. Hendy. (1985) The use of tree comparison metrics. *Systematic Zoology* 34: 75-82
- Penny, D., Hendy MD, and Steel MA (1992) Progress with methods for constructing evolutionary trees. *Trends in Ecology and Evolution* 7: 73-79

- Pickett KM, Tolman GL, Wheeler WC, et al. (2005) Parsimony overcomes statistical inconsistency with the addition of more data from the same gene. *Cladistics* 21: 438-445
- Prendini, L. (2001) Species or supraspecific taxa as terminals in cladistic analysis? *Groundplans versus exemplars revisited*. *Systematic Biology* 50: 290-300
- Quicke, D. L. J., J. Taylor, and A. Purvis. (2001) Changing the landscape: a new strategy for estimating large phylogenies. *Systematic Biology* 50: 60-66
- Sankoff, D., R. J. Cedergren, and W. McKay. (1982) A strategy for sequence phylogeny research. *Nucleic Acids Research* 10: 421-431
- Sankoff, D. D. and R. J. Cedergren. (1983) Simultaneous comparison of three or more sequences related by a tree. Pages 253-263 in D. Sankoff and J. B. Kruskal (ed.), *Time Warps, String Edits, and Macromolecules: the Theory and Practice of Sequence Comparison* (Addison-Wesley: Reading, Mass.).
- Sankoff, D. D. and P. Rousseau. (1975) Locating the vertices of a Steiner tree in an arbitrary metric space. *Mathematical Programming* 9: 240-246
- Simmons, N. B. (2001) Misleading results from the use of ambiguity coding to score polymorphisms in higher-level taxa. *Systematic Biology* 50: 613-620
- Smith, E. N., and R. L. Gutberlet Jr. (2001) Generalized frequency coding: a method of preparing polymorphic multistate characters for phylogenetic analysis. *Systematic Biology* 50: 156-169
- Sokal, R. R. and F. J. Rohlf. (1981) Taxonomic congruence in the Leptopodomorpha re-examined. *Systematic Zoology* 30: 309-325
- Sober, Elliott. (2004) The contest between parsimony and likelihood. *Systematic Biology* 53: 644-653
- Swofford, D. L. (1991) When are phylogeny estimates from morphological and molecular data incongruent? Pages 295-333 in M. M. a. J. C. Miyamoto (ed.), *Phylogenetic Analysis of DNA Sequences* (Oxford University Press: New York, N. Y.).
- Swofford, D. L. and W. P. Maddison. (1987) Reconstructing ancestral character states under Wagner parsimony. *Mathematical Biosciences* 87: 199-229
- Swofford DL, and Olsen GJ (1990) Phylogeny reconstruction. pp. 411-501 in DM Hillis and C Moritz (eds.): *Molecular Systematics* (First Edition). Sunderland, MA:Sinauer Associates.
- \*\* Swofford, D. L. (1991) PAUP: Phylogenetic Analysis Using Parsimony, 31 Illinois Nat. Hist. Surv., Champaign, Illinois.
- Templeton, A. R. (1983a) Convergent evolution and non-parametric inferences from restriction fragment and DNA sequence data. pp 151-179 in B. Weir (ed.), *Statistical Analysis of DNA Sequence Data* (Marcel Dekker: New York).
- Templeton, A. R. (1983b) Phylogenetic inference from restriction endonuclease cleavage site maps with particular reference to the evolution of humans and apes. *Evolution* 37: 221-244
- WAGNER, P. J. (1995) Stratigraphic tests of cladistic hypotheses. *Paleobiology* 21: 153-178
- WAGNER, P. J. (1997) Patterns of morphologic diversification among the rostroconchia. *Paleobiology* 23: 115-150
- Wiley, E. O. (1981) *Phylogenetics. The Theory and Practice of Phylogenetic Systematics*. (Wiley and Sons: New York).
- Wheeler W.C. and Nixon K. (1994) A novel method for economical, diagnosis of cladograms Sankoff optimization. *Cladistics* 10: 207-213
- Wiley, E. O., D. Siegel-Causey, D. R. Brooks, and V. A. Funk. (1991) *The Complete Cladist. A Primer of Phylogenetic Procedures*. (University of Kansas Museum of Natural History Special Publ. No. 19, Lawrence, Kansas).

## Phenetics

- Barbuiani, G., Oden, N.L., & Sokal, R.R. (1989) Detecting regions of abrupt change in maps of biological variables. *Systematic Zoology* 38: 37 6-389
- Barrett S.J. & Sneath, P.H.A. (1994) A numerical phenotypic taxonomic study of the genus *Neisseria*. *Microbiology* 140: 2867-2891
- Blackwelder, R.E. (1967) A critique of numerical taxonomy. *Systematic Zoology* 16: 64-72
- \* Colless, D.H. (1967) An examination of concepts in phenetic taxonomy. *Systematic Zoology* 16: 6-27
- \*\* Farris, J.S. (1967) The meaning of relationship and taxonomic procedure. *Systematic Zoology* 16: 44-51
- Felsenstein, J. (2001) The troubled growth of statistical phylogenetics. *Systematic Biology* 50: 465-467
- Huson, Daniel H.; Steel, Mike. (2004) Distances that perfectly mislead. *Systematic Biology* 53: 327-332
- \* Jacobson, H.R. & Kistner, D.H. (1975) Numeric analyses of the relationships of genera and species of the subtribe *Termitusina* (Coleoptera: Staphylinidae). *Systematic Zoology* 24: 191-198
- \* Kim, J., Rohlf, F.J. & Sokal, R.R. (1993) The accuracy of phylogenetic estimation using the neighbor-joining method. *Evolution* 47: 471-486
- Mayr, E. (1965) Numerical phenetics and taxonomic theory. 73-97 14: 73-97
- Moss, W. (1968) Experiments with various techniques of numerical taxonomy. *Systematic Zoology* 17: 31-47
- Nelson, A.D. and W.J. Elisens. (1999) Polyploid evolution and biogeography in *Chelone* (Scrophulariaceae): Morphological and isozyme evidence. *American Journal of Botany* 86: 1487-1501
- Rasnitsyn, A.P. (1996) Conceptual issues in phylogeny, taxonomy, and nomenclature. *CONTRIB ZOOL* 66: 3-41
- Rohlf, F.J., Chang, W.S., Sokal, R.R. & Kim, J.Y. (1990) Accuracy of estimated phylogenies effects of tree topology and evolutionary model. *Evolution* 44: 1671-1684
- Sneath, P. H. A. (1967) Some statistical problems in numerical taxonomy. *Statistician* 17: 1-12
- Sneath, P. H. A. (1969) Recent trends in numerical taxonomy. *Taxon* 18: 14-20
- \* Sneath, P. H. A. (1971) Numerical taxonomy: criticisms and critiques. *Biol. J. Linn. Soc.* 3: 147-157
- Sneath, P. H. A. (1961) Recent developments in theoretical and quantitative taxonomy. *Systematic Zoology* 10: 118-139
- Sneath, P.H.A. (1989) Analysis and interpretation of sequence data for bacterial systematics: The view of a numerical taxonomist. *Systematic and Applied Microbiology* 12: 15-31
- Sneath, P. H. A., and R. R. Sokal (1962) Numerical taxonomy. *Nature* 193: 855-860
- \*\* Sneath, P.H.A. & Sokal, R.R. (1973) Numerical taxonomy; the principles and practice of numerical classification. W. H. Freeman, San Francisco.
- Sokal, R. R. (1965) Statistical methods in systematics. *Biol. Rev.* 40: 337-391
- Sokal, R. R. (1966) Numerical taxonomy. *Sci. Amer.* 215: 106 116
- Sokal, R. R. (1969) Animal taxonomy: theory and practice. *Quart. Rev. Biol.* 44: 209-211
- Sokal, R. R., J. H. Camin, F. J. Rohlf, and P. H A. Sneath (1965) Numerical taxonomy: some points of view. *Systematic Zoology* 14: 237-243
- \* Sokal, R.R., Kim, J.Y. & Rohlf, F.J. (1992) Character and OTU stability in 5 taxonomic groups. *Journal of Classification* 9: 117-140

\* van der Steen, W.J. & Boontje, W. (1973) Phylogenetic versus phenetic taxonomy: A reappraisal. Systematic Zoology 22: 55-63

### Maximum Likelihood

- Bergsten J. (2005) A review of long-branch attraction. Cladistics 21: 163-193
- Buckley, T. R., C. Simon, and G. K. Chambers. (2001) Exploring among0site variation models in a maximum likelihood framework using empirical data: effects of model assumptions on estimates of topology, branch lengths, and bootstrap support. Systematic Biology 50: 67-86
- Brinkmann, Henner; Van der Giezen, Mark; Zhou, Yan, et al. (2005) An empirical assessment of long-branch attraction artefacts in deep eukaryotic phylogenomics. Systematic Biology 54:
- Caterinno, M. S., R. D. Reed, M. M. Kuo, and F. A. H. Sperling. (2001) A partitioned likelihood analysis of swallowtail butterfly phylogeny (Lepidoptera: Papilionidae). Systematic Biology 50: 106-127
- DeBry, R. W. and N. A. Slade. (1985) Cladistic analysis of restriction endonuclease cleavage maps within a maximum-likelihood framework. Systematic Zoology 34: 21-34
- deQueiroz, K. and S. Poe. (2001) Philosophy and phylogenetic inference: a comparison of likelihood and parsimony methods in the context of Karl Popper's writings on corroboration. Systematic Biology 50: 305-321
- Huelsenbeck, J. P. and B. Rannala. (1997) Maximum likelihood estimation of hpylogeny using stratigraphic data. Paleobiology 23: 174-180
- Huelsenbeck, J. P. and B. Rannala. (2000) Using stratigraphic information in phylogenetics. pp. 165-191 in J. J. Wiens (ed.), *Phylogenetic Analysis of Morphological Data*. Washington DC, Smithsonian Institution Press.
- Faith, D. P. and W. H. Trueman. (2001) Towards an inclusive phylogeny for phylgenetic inference. Systematic Biology 50: 331-350
- Farris, J. S. (2000) Corroboration versus "Strongest Evidence. Cladistics 16: 385-393
- \*\* Felsenstein J. (1981) Evolutionary trees from DNA sequences: a maximum likelihood approach. J. Mol. Evolution 17: 368-376
- Haber, Matthew H. (2005) On probability and systematics: Possibility, probability, and phylogenetic inference. Systematic Biology 54: 831-841
- Kluge, A. G. (2001) Philosophical conjectures and their refutation. Systematic Biology 50: 322-331
- Lewis, P. O. (2001) A likelihood approach to estimating phylogeny from discrete morphological character data. Systematic Biology 50: 913-925
- Mooers, A. O. and D. Schluter. (1990) Reconstructin ancestor states with maximum likelihood: support for one- and two-rate models. Systematic Biology 48: 612-622
- Pagel, M. (1999) The maximum likelihood approach to reconstructing ancestral character states of discrete characters on phylogenies. Systematic Biology 48: 612-622
- Pol, D. and M. E. Siddall. (2001) Biases in Maximum Likelihood and Parsimony: A Simulation Approach to a 10-Taxon Case. Cladistics 17: 266-281
- Rogers, J. S. (2001) Maximum likelihood estimation of phylogenetic trees is consistent when substitution rates vary according to the invariable sites plus gamma distribution. Systematic Biology 50: 713-722
- Salter, L. A. (2001) Complexity of the likelihood surface for a large DNA data set. Systematic Biology 50: 970-978
- Salter, L. A. and D. K Pearl. (2001) Stochastic search strategy for estimation of maximum likelihood phylogenetic trees. Systematic Biology 50: 7-18
- Sanderson, M. J. and J. Kim. (2000) Parametric phylogenetics? Systematic Biology 49: 817-829

- Swofford, D. L., P. J. Waddell, J. P. Huelsenbeck, P. G. Foster, P. O. Lewis, and J. S. Rogers. (2001) Bias in phylogenetic estimation and its relevance to the choice between parsimony and likelihood methods. *Systematic Biology* 50: 525-539
- Wagner, P. J. (1998) A likelihood approach for evaluating estimates of phylogenetic relationships among fossil taxa. *Paleobiology* 24: 430-449
- WAGNER, P. J. (1999) The utility of fossil data in phylogenetic analyses: a likelihood example using Ordovician-Silurian species of the Lophospiridae (Gastropoda: Murchisoniina). *Amer. Malac. Bull.* 15: 1-31
- Wagner, P. J. (2000) Phylogenetic analyses and the fossil record: tests and inferences, hypotheses and models. *Paleobiology* 26: 341-371
- Wagner, P. J. (2001) Rate heterogeneity in shell character evolution among lophospiriod gastropods. *Paleobiology* 27: 290-310

### Bayesian Methods

- Nylander, Johan A. A.; Ronquist, Fredrik; Huelsenbeck, John P., et al. (2004) Bayesian phylogenetic analysis of combined data. *Systematic Biology* 53: 47-67
- Pagel, Mark; Meade, Andrew; Barker, Daniel. (2004) Bayesian estimation of ancestral character states on phylogenies. *Systematic Biology* 53: 673-684
- Redelings, Benjamin D.; Suchard, Marc A. (2005) Joint Bayesian estimation of alignment and phylogeny. *Systematic Biology* 54: 401-418
- Yang, Ziheng; Rannala, Bruce. (2005) Branch-length prior influences Bayesian posterior probability of phylogeny. *Systematic Biology* 54: 455-470
- Zwickl, Derrick J.; Holder, Mark T. (2004) Model parameterization, prior distributions, and the general time-reversible model in Bayesian phylogenetics. *Systematic Biology* 53: 877-888
- Phylogenetic Trees: Support & Tree Comparisons ()
- Adams, E. N., III. (1972) Consensus techniques and the comparison of taxonomic trees. *Systematic Zoology* 21: 390-397
- Archie, J. W. (1989) Homoplasy excess ratios: new indices for measuring levels of homoplasy in phylogenetic systematics and a critique of the consistency index. *Systematic Zoology* 38: 253-269
- Archie, J. W. (1989) A randomization test for phylogenetic information in systematic data. *Systematic Zoology* 38: 239-252
- Barrett M, Donoghue MJ, and Sober E. (1991) Against consensus. *Systematic Zoology* 40: 486-493
- Bremer K. (1988) The limits of amino acid sequence data in angiosperm phylogenetic reconstruction. *Evolution* 42: 795-803
- Bremer, K. (1990) Combinable component consensus. *Cladistics* 6: 369-372
- Bremer, K. (1994) Branch support and tree stability. *Cladistics* 10: 295-304
- Brower, A. V. Z., R. DeSalle and A. Vogler. (1996) Gene trees, species trees, and systematics: a cladistic perspective. *Annual Review of Ecology and Systematics* 27: 423-450
- Bryant, D. (2003) A classification of consensus methods for phylogenetics. in Janowitz, M., Lapointe, F.J., McMorris, F., Mirkin, B. Robers, F. (eds.) *Bioconsensus*. DIMACS-AMS. 163-184
- Bull, J. J., J. P. Huelsenbeck, C. W. Cunningham, D. L. Swofford and P. J. Waddell. (1993) Partitioning and combining data in phylogenetic analysis. *Systematic Biology* 42: 384-397
- Cameron, S. A. and P. Mardulyn. (2001) Multiple molecular data sets suggest independent origins of highly eusocial behavior in bees (Hymenoptera: Apinae). *Systematic Biology* 50: 194-214

- Cannon, C. H. and P. S. Manos. (2001) Combining and comparing morphometric shape data with a molecular phylogeny: the case of fruit type evolution in Bornean *Lithocarpus* (Fagaceae). *Systematic Biology* 50: 860-880
- Chavarria, G. and J. M. Carpenter. (1994) Total evidence and the evolution of highly social bees. *Cladistics* 10: 229-258
- Chippindale, P. T. and J. J. Wiens. (1994) Weighting, partitioning, and combining characters in phylogenetic analysis. *Systematic Biology* 43: 278-287
- Coddington, J. and Scharff, N. (1994) Problems with zero-length branches. *Cladistics* 10: 415-423
- \*\* de Queiroz, A., M. J. Donoghue and J. Kim. (1995) Separate versus combined analysis of phylogenetic evidence. *Annual Review of Ecology and Systematics* 26: 657-681
- DeBry, R. W. (2001) Improving interpretation of the decay index for DNA sequence data. *Systematic Biology* 50: 742-752
- DeBry, R. W. and R. G. Olmstead. (2000) A simulation study of reduced tree-search effort in bootstrap resampling analysis. *Systematic Biology* 49: 171-179
- Donoghue MJ, Olmstead RG, Smith JF, and Palmer JD. (1992) Phylogenetic relationships of Dipsacales based on rbcL sequences. *Ann. Missouri Bot. Gard.* 79: 333-345
- Farris, J. S. (1989a) The retention index and homoplasy excess. *Systematic Zoology* 38: 406-407
- Farris, J. S. (1989b) The retention index and the rescaled consistency index. *Cladistics* 5: 417-419
- Farris J.S., Källersjö, M., Kluge, A.G. and Bult, C. (1994) Testing significance of incongruence. *Cladistics* 10: 315-319
- Farris, J. S., M. Källersjö, and J. E. De Laet. (2001) Branch Lengths Do Not Indicate Support-Even in Maximum Likelihood. *Cladistics* 17: 298-299
- \*\* Felsenstein, J. (1985) Confidence limits on phylogenies: An approach using the bootstrap. *Evolution* 39: 783-791
- Flook, P. K., S. Klee, and C. H. F. Rowell. (1999) Combined molecular phylogenetic analysis of the Orthoptera (Arthropoda, Insecta) and implications for their higher systematics. *Systematic Biology* 48: 233-253
- Flores-Villela, O., K. M. Kjer, M. Benabib, and J. W. Sites Jr. (2000) Multiple data sets, congruence, and hypothesis testing for the phylogeny of basal groups of the lizard genus *Sceloporus* (Squamata, Phrynosomatidae). *Systematic Biology* 49: 713-739
- Gatesy, J. (2000) Linked branch support and tree stability. *Systematic Biology* 49: 800-808
- Gatesy, J. and P. Arctander. (2000) Hidden morphological support for the phylogenetic placement of *Pseudoryx nghetinhensis* with bovine bovids: a combined analysis of gross anatomical evidence and DNA sequences from five genes. *Systematic Biology* 49: 515-538
- Goldman, N., J. P. Anderson, and A. G. Rodrigo. (2000) Likelihood-based tests of topologies in phylogenetics. *Systematic Biology* 49: 652-670
- Goloboff P. (1991) Homoplasy and the choice among cladograms. *Cladistics* 7: 215-232
- Grandcolas, P., P.-L. Deleporte, L. Desutter-Grandcolas, C. Daugeron. (2001) Phylogenetics and Ecology: As Many Characters as Possible Should Be Included in the Cladistic Analysis. *Cladistics* 17: 104-110
- Graham LE, Delwiche CF, and Mishler BD. (1991) Phylogenetic connections between the "green algae" and the "bryophytes". *Advances in Bryology* 4: 213-244
- Grant, T, and A. G. Kluge. (2003) Data exploration in phylogenetic inference: scientific, heuristic, or neither. *Cladistics*: 19: 379-418
- Huelsenbeck, J. P. (1991) Tree-length distribution skewness: an indicator of phylogenetic information. *Systematic Zoology* 40: 257-270
- Huelsenbeck, J.P. (1995) Performance of phylogenetic methods in simulation. *Systematic Biology* 44: 17-48

- Huelsenbeck, J. P. and J. J. Bull. (1996) A likelihood ratio test to detect conflicting phylogenetic signal. *Systematic Biology* 45: 92-98
- \* Huelsenbeck, J. P., J. J. Bull and C. W. Cunningham. (1996) Combining data in phylogenetic analysis. *Trends Ecol. Evolution* 11: 152-158
- Joy, T. and J. E. Conn. (2001) Molecular and morphological phylogenetic analysis of an insular radiation of Pacific black flies. *Systematic Biology* 50: 18-38
- Kallersjo M, Farris JS, Kluge AG, and Bult C. (1992) Skewness and permutation. *Cladistics* 8: 275-287
- Kennedy, Martyn; Holland, Barbara R.; Gray, Russell D., et al. (2005) Untangling long branches: Identifying conflicting phylogenetic signals using spectral analysis, neighbor-net, and consensus networks. *Systematic Biology* 54: 620-633
- Kjer, K. M., R. J. Blahnik, and R. W. Holzenthal. (2001) Phylogeny fo Trichoptera (caddisflies): characterization of signal and noise within multiple data sets. *Systematic Biology* 50: 758-780
- Klassen GJ, Mooi RD, and Locke A. (1991) Consistency indices and random data. *Systematic Zoology* 40: 446-457
- Kluge A. J. (1989) A concern for evidence and a phylogenetic hypothesis of relationships among Epicrates (Boidae, Serpentes). *Systematic Zoology* 38: 39654
- Kress, W. J., L. M. Price, W. J. Hahn, and E. A. Zimmer. (2001) Unraveling the evolutionary radiation of the families of the Zingiberales using morphological and molecular evidence. *Systematic Biology* 50: 926-944
- Lee, M. S. Y. (2000) Tree robustness and clade significance. *Systematic Biology* 49: 829-836
- Levaseur, C. and F.-J. Lapointe. (2001) War and peace in phylogenetics: a rejoinder on total evidence and consensus. *Systematic Biology* 50: 881-891
- McCracken, K. G., J. Harshman, D. A. McClellan, and A. D. Afton. (1999) Data set incongruence and correlated character evolution: an example of functional convergence in the hind-limbs of stifftail diving ducks. *Systematic Biology* 48: 683-714
- McLennan, D. A. and M. Y. Mattern. (2001) The Phylogeny of the Gasterosteidae: Combining Behavioral and Morphological Data Sets. *Cladistics* 17: 11-27
- Mishler BD, Donoghue MJ, and Albert VA. (1991) The decay index as a measure of relative robustness within a cladogram [abstract]. Hennig X [Annual meeting of the Willi Hennig Society], Toronto, Ontario.
- Mishler, B. D., L. A. Lewis, M. A. Buchheim, K. S. Renzaglia, D. J. Garbary, C. F. Delwiche, F. W. Zechman, T. S. Kantz and R. L. Chapman. (1994) Phylogenetic relationships of the "green algae" and "bryophytes". *Ann. Mo. Bot. Gard.* 81: 451-483
- Miyamoto MM. (1985) Consensus cladograms and general classifications. *Cladistics* 1: 186-189
- Miyamoto, M.M. and M.W. Fitch. (1995) Testing species phylogenies and phylogenetic methods with congruence. *Systematic Biology* 41: 64-76
- Mort, M. E., P. S. Soltis, D. E. Soltis, and M. L. Mabry. (2000) Comparison of methods for estimating internal support on phylogenetic trees. *Systematic Biology* 49: 160-171
- Nee, Sean. (2004) Extinct meets extant: simple models in paleontology and molecular phylogenetics. *Paleobiology* 30: 172-178
- Penny, D. and M. D. Hendy. (1985) The use of tree comparison metrics. *Systematic Zoology* 34: 75-82
- Poe S, Chubb AL. (2004) Birds in a bush: Five genes indicate explosive evolution of avian orders. *Evolution* 58: 404-415
- Quicke, D. L. J. and R. Belshaw. (1999) Incongruence between morphological data sets: an example from the evolution of endoparasitism among parasitic wasps (Hymenoptera: Braconidae). *Systematic Biology* 48: 436 - 454

- Rohlf, F. J. (1982) Consensus indices for comparing classifications Mathematical Biosciences 59: 131-144
- Sanderson MJ, and Donoghue MJ (1989) Patterns of variation in levels of homoplasy. Evolution 43: 1781-1795
- \*\* Sanderson, M.J. (1995) Objections to bootstraping phylogenies: a critique. Systematic Biology 44: 299-320
- Sanderson, M. J., and M. Wojciechowski. (2000) Improved bootstrap confidence limits in large scale phylogenies, with an example from neo-astragalus (Leguminosae). Systematic Biology 49: 671-685
- Sharkey, M. J. and J. W. Leathers. (2001) Majority Does Not Rule: The Trouble with Majority-Rule Consensus Trees. Cladistics 17: 282-284
- Sorensen MV, Sterrer W, Giribet G. (2006) Gnathostomulid phylogeny inferred from a combined approach of four molecular loci and morphology. Cladistics 22: 32-58
- Steel, M., A. W. M. Dress, and S. Bocker. (2000) Simple but fundamental limitations on supertree and consensus tree methods. Systematic Biology 49: 363-368
- Sullivan, J. and D. L. Swofford. (2001) Should we use model-based methods for phylogenetic inference when we know that assumptions about among site rate variation and nucleotide substitution pattern are violated? Systematic Biology 50: 723-729
- Summral, C. D., C. A. Brochu, and J. W. Merck Jr. (2001) Global lability, regional resolution, and majority rule consensus bias. Paleobiology 27: 254-261
- Swofford, D. L. (1991) When are phylogeny estimates from molecular and morphological data incongruent? Pp. 295-333 in M. M. Miyamoto & J. Cracraft (ed.), Phylogenetic analysis of DNA sequences. Oxford University Press, New York.
- Weiblen, G. D. (2001) Phylogenetic relationships of fig wasps pollinating functionally dioecious Ficus based on mitochondrial DNA sequences and morphology. Systematic Biology 50: 243-267
- Wiens, J. J. and B. D. Hollingsworth. (2000) War of the iguanas: conflicting molecular and morphological phylogenies and long-branch attraction in iguanid lizards. Systematic Biology 49: 143-159
- Wilkinson, M. (1994) Common cladistic information and its consensus representation: reduced Adams and reduced cladistic trees and profiles. Systematic Biology 43: 343-368
- Wilkinson, M. and J. L. Thorley. (2001) Efficiency of strict consensus trees. Systematic Biology 50: 610-612
- Wilkinson, M., J. L. Thorley, and P. Upchurch. (2000) A chain is no stronger than its weakest link: double decay analysis of phylogenetic hypotheses. Systematic Biology 49: 754-776
- Wood, S.W. (1994) Monophyly and comparisons between trees. Cladistics 10: 339-346
- Yoder, A. D., J. A. Irwin, and B. A. Payseur. (2001) Failure of the ILD to determine data combinability for slow loris phylogeny. Systematic Biology 50: 408-424
- Zandler, R. H. (2001) A conditional probability of reconstruction measure for internal cladogram branches. Systematic Biology 50: 425-437
- Reticulation and Phylogeography ()
- Arnold, M. L., C. M. Buckner and J. J. Robinson. (1991) Pollen-mediated introgression and hybrid speciation in Louisiana irises. PNAS 88: 1398-1402
- Arnold, M. L., J. J. Robinson, C. M. Buckner and B. D. Bennet. (1992) Pollen dispersal and interspecific gene flow in Louisiana irises. Heredity 68: 399-404
- Avise, J. C. (1989) Gene trees and organismal histories: a phylogenetic approach to population biology. Evolution 43: 1192-1208

- Avise, J. C. and R. M. Ball. (1990) Principles of genealogical concordance in species concepts and biological taxonomy. *Oxford Surveys in Evolutionary Biology* 7: 45-67
- \* Baum, D. (1992) Phylogenetic species concepts. *Trends in Ecology and Evolution* 7: 1-2
- Baum, D. A., and K. L. Shaw. (1995) Genealogical perspectives on the species problem. Pages 289-303 in *Experimental and molecular approaches to plant biosystematics*. Monographs in systematics, Volume 53 (P. C. Hoch and A. G., Stevenson, eds.). Missouri Botanical Garden, St, Louis.
- Carstens BC, Brunsfeld SJ, Demboski JR, et al. (2005) Investigating the evolutionary history of the Pacific Northwest mesic forest ecosystem: Hypothesis testing within a comparative phylogeographic framework. *Evolution* 59: 1639-1652
- Crandall, K. A. (1994) Intraspecific cladogram estimation: accuracy at higher levels of divergence. *Systematic Biology* 43: 222-235
- Doyle, J. J. (1992) Gene trees and species trees: Molecular systematics as one-character taxonomy. *Systematic Botany* 17: 144-163
- Funk, V. A. (1985) Phylogenetic patterns and hybridization Ann. Missouri Bot. Gard. 72: 681-715
- Gadgil and L. L. Cavalli-Sforza. (1995) Demographic history of India and mtDNA sequence diversity. *Am. J. Hum. Genet.* 56: 979-992
- Goodman, M., J. Czelusniak, G. W. Moore, A. E. Romero-Herrera, and G. Matsuda. (1979) Fitting the gene lineage into its species lineage, a parsimony strategy illustrated by cladograms constructed from globin sequences. *Systematic Zoology* 28: 132-163
- Heads M. (2005) Dating nodes on molecular phylogenies: a critique of molecular biogeography. *Cladistics* 21: 62-78
- Heiser, C. B. (1973) Introgression re-examined. *Bot. Rev.* 39: 347-366
- \* Hudson, R. R. (1991) Gene genealogies and the coalescent process. *Oxford Surveys in Evolutionary Biology* 7: 1-44
- Hudson, R. R., M. Slatkin and W. P. Maddison. (1992) Estimation of levels of gene flow from DNA sequence data. *Genetics* 132: 583-589
- James JK, Abbott RJ. (2005) Recent, allopatric, homoploid hybrid speciation: The origin of *Senecio squalidus* (Asteraceae) in the British Isles from a hybrid zone on Mount Etna, Sicily. *Evolution* 59: 2533-2547
- Kidwell, M. G. (1993) Lateral transfer in natural populations of eukaryotes. *Annu. Rev. Genet.* 27: 235-256
- Maddison, W. P. (1997) Gene trees in species trees. *Systematic Biology* 46: 523-536
- Mason-Gamer, Roberta J. (2004) Reticulate evolution, introgression, and intertribal gene capture in an allohexaploid grass. *Systematic Biology* 53: 25-37
- McDade, L. (1990) Hybrids and phylogenetic systematics. I. Patterns of character expression in hybrids and their implications for cladistic analysis. *Evolution* 44: 1685-1700
- \*\* McDade, L. A. (1992) Hybrids and phylogenetic systematics II. The impact of hybrids on cladistic analysis. *Evolution* 46: 1329-1346
- McDade, L. A. (1995) Hybridization and phylogenetics. in *Experimental and molecular approaches to plant biosystematics* (Hoch, P. C. and A. G. Stephenson, ed. Missouri Botanical Garden, St. Louis.
- McDade, L. A. (1997) Hybrids and phylogenetic systematics III. Comparison with distance methods. *Systematic Botany* 22: 669-683
- Mountain, J. L., J. M. Hebert, S. Bhattacharyya, P. A. Underhill, C. Ottolenghi, M. Nason, J. D., N. C. Ellstrand and M. I. Arnold. (1992) Patterns of hybridization and introgression in populations of oaks, manzanitas, and irises. *Am. J. Bot.* 79: 101-111

- Nieto, F.G., A.J. Fuertes, and J.A. Rossello. (2001) Can extensive reticulation and concerted evolution result in a cladistically structured mmolecular data set? *Cladistics* 17: 301-312
- Ree RH. (2005) Detecting the historical signature of key innovations using stochastic models of character evolution and cladogenesis. *Evolution* 59: 257-265
- Rieseberg, L. H. (1991) Homoploid reticulate evolution in *Helianthus* (Asteraceae): evidence from ribosomal genes. *Amer. J. Bot* 78: 1218-1237
- Rieseberg, L. H., R. Carter and S. Zona. (1990) Molecular tests of the hypothesized hybrid origin of two diploid *Helianthus* species (Asteraceae). *Evolution* 44: 1498-1511
- Schlefer, E. K., M. A. Romano, S. I. Guttman and S. B. Ruth. (1986) Effects of twenty years of hybridization in a disturbed habitat on *Hyla cinerea* and *Hyla gratiosa*. *J. of Herpetology* 20: 210-221
- Skala, Z. and Zrzavy J. (1994) Phylogenetic reticulations and cladistics - discussion of methodological concepts. *Cladistics* 10: 305-313
- Slatkin, M. and W. Maddison. (1989) A cladistic measure of gene flow inferred from the phylogenies of alleles. *Genetics* 123: 603-613
- Slatkin, M. and W. Maddison. (1990) Detecting isolation by distance using phylogenies of genes. *Genetics* 126: 249-260
- Vrana, P. and W. Wheeler. (1992) Individual organisms as terminal entities: laying the species problem to rest. *Cladistics* 8: 67-72
- Wagner, W. H. (1983) Reticulistics: the recognition of hybrids and their role in cladistics and classification. Pages 63-79 in *Advances in Cladistics*, Volume 2 (Platnick, N. I. and V. A. Funk, ed.) Columbia University Press, New York.
- Williams ST, Reid DG. (2004) Speciation and diversity on tropical rocky shores: A global phylogeny of snails of the genus *Echinolittorina*. *Evolution* 58: 2227-2251
- Woodruff, D. S. and S. J. Gould. (1987) Fifty years of interspecific hybridization: genetics and morphometrics of a controlled experiment on the land snail *Cerion* in the Florida Keys. *Evolution* 41: 1022-1043

### Conservation

- \*\*\* Crozier, R.H., Dunnett, L.J. and Agapow, P.M. (2005) Phylogenetic biodiversity assessment based on systematic nomenclature. *Evolutionary Bioinformatics Online* 1: 11-36
- Faith, D. P. (1992a) Conservation evaluation and phylogenetic diversity. *Biological Conservation* 61: 1-10
- Faith, D. P. (1992b) Systematics and conservation: on predicting the feature diversity of subsets of taxa. *Cladistics* 8: 361-373
- \*\* Forey, P.L., C. J. Humphries and P. H. Williams. (1994) Systematics and conservation evaluation, Systematics Association Special Volume No. 50 Clarendon Press, Oxford.
- Mishler, B.D. (1995) Plant systematics and conservation: science and society. *Madrono* 42: 103-113
- Moritz,C., J. L. Patton, C. J. Schneider, and T. B. Smith. (2000) DIVERSIFICATION OF RAINFOREST FAUNAS: An Integrated Molecular Approach *Annu. Rev. Ecol. Syst.* 31: 533-563
- Polhemus, D. A. (1997) Phylogenetic analysis of the Hawaiian damselfly genus *Megalagrion* (Odonata: Coenagrionidae): Implications for biogeography, ecology, and conservation biology. *Pacific Science* 51: 395-412
- Tyler, H. A., Brown, K. S., Jr., and Wilson, K. H. (1994) Swallowtail butterflies of the Americas: A study in biological dynamics, ecological diversity, biosystematics, and conservation.

- Vane-Wright, R. I., C. J. Humphries and P. H. Williams (1991) What to protect? -- Systematics and the agony of choice. *Biological Conservation* 55 235-254
- Biogeography ()
- Alroy, J. (1995) Continuous track analysis: a new phylogenetic and biogeographic method. *Systematic Biology* 44: 152-178
- Avise, J. C., J. Arnold, R. M. Ball, E. Bermingham, T. Lamb, J. E. Neigel, C. A. Reeb and N. C. Saunders. (1987) Intraspecific phylogeography: the mitochondrial DNA bridge between population genetics and systematics. *Annual Review of Ecology and Systematics* 18: 489-522
- Baldwin, B. G., D. W. Kyhos and J. Dvorak. (1990) Chloroplast DNA evolution and adaptive radiation in the Hawaiian silversword alliance (Asteraceae-Madiinae). *Ann. Mo. Bot. Gard.* 77: 96-109
- Baldwin, B. G. and R. H. Robichaux. (1995) Historical biogeography and ecology of the Hawaiian silversword alliance (Asteraceae): New molecular phylogenetic perspectives. Pp. 259-287 In Wagner, W. L. and V. Funk (Eds.) *Hawaiian Biogeography, evolution on a Hot Spot Archipelago*. Smithsonian Institution Press, Washington.
- Baldwin, B. G., and Sanderson, M. J. (1998) Age and rate of diversification of the Hawaiian silversword alliance (Compositae). *PNAS* 95: 9402-9406
- Ball, I.R. (1976) Nature and formulation of biogeographical hypotheses. *Systematic Zoology* 24: 407-430
- \*\* Brooks, D.R., & D. McLennan. (1991) *Phylogeny, Ecology, and Behavior*. University of Chicago Press. Pp. 206-248
- \* Brooks, D. R. (1990) Parsimony analysis in historical biogeography and coevolution: Methodological and theoretical update. *Systematic Zoology* 39: 14-30
- Carpenter, J M. (1996) Phylogeny and biogeography of Polistes. Pp. 18-57 in Turillazzi, S. and M. J. West-Eberhard (Ed.). *Natural history and evolution of paper-wasps; Proceedings of the International Workshop*, Castiglioncello, Italy, October 4-7, 1993. Oxford University Press:
- Coscaron, M D C; Morrone, J J. (1997) Cladistics and biogeography of the assassin bug genus Melanolestes Stal (Heteroptera: Reduviidae). *Proceedings of the Entomological Society of Washington* 99: 55-59
- Cracraft, J. (1995) Cladistic analysis and vicariance biogeography. pp. 104-112 in Slatkin, M. (Ed.). *Exploring evolutionary biology: Readings from American Scientist*. Sinauer Associates, Inc.: Sunderland, Massachusetts, USA.
- De Meyer, M. (1996) Cladistic and biogeographic analyses of Hawaiian Pipunculidae (Diptera) revisited. *Cladistics* 12: 291-303
- Emerson, B C; Wallis, G P; Patrick, B H. (1997) Biogeographic area relationships in southern New Zealand: A cladistic analysis of Lepidoptera distributions. *Journal of Biogeography* 24: 89-99
- Enghoff, H. (1995) Historical biogeography of the Holarctic: Area relationships, ancestral areas, and dispersal of non-marine animals. *Cladistics* 11: 223-263
- Evans, B J; Morales, J C; Picker, M D; Kelley, D B; Melnick, D J. (1997) Comparative molecular phylogeography of two *Xenopus* species, *X. gilli* and *X. laevis*, in the south-western Cape Province, South Africa. *Molecular Ecology* 6: 333-343
- Grant, P. R. (1998) Radiations, communities, and biogeography. Pp. 196-209. in P. R. Grant, eds. *Evolution on islands*. Oxford University Press, Oxford.
- Gray, J. and A.J. Boucot (eds. (1979) *Historical Biogeography, Plate Tectonics, and the Changing Environment*, Oregon State University Press, Corvallis, Oregon.
- Kluge, A. G. (1988) Parsimony in vicariance biogeography: a quantitative method and a greater Antillean example. *Systematic Zoology* 37: 315-328
- Linder, H P; Crisp, M D. (1995) Nothofagus and Pacific biogeography. *Cladistics* 11: 5-32

- Lydeard, C. M.C. Wooten, and A. Meyer. (1995) Molecules, morphology and area cladograms: a cladistic and biogeographic analysis of *Gambusia* (Teleostei: Poeciliidae) Systematic Biology 44: 221-236
- Morrone J.J. and Carpenter, J.M. (1994) In search of a method for cladistic biogeography - an comparison of component analysis, brooks parsimony analysis, and three area statements. Cladistics 10: 99-153
- Nelson, G. (1985) A decade of challenge the future of biogeography Earth Sciences History 4: 187-196
- Nelson, G. and N. Platnick. (1981) Systematics and biogeography, cladistics and vicariance. Columbia Univ. Press, New York.
- Nelson, G. and Rosen, D.E. (1981) Vicariance biogeography: a critique. Columbia University Press, New York.
- Nelson, G and Ladiges, P. Y. (1996) Paralogy in cladistic biogeography and analysis of paralogy free subtrees. American Museum Novitates 3167: 1-58
- Page, R. D. M. (1989) Comments on component-compatibility in historical biogeography. Cladistics 5: 167-182
- Page, R. D. M. (1994) Maps between trees and cladistic analysis of historical associations among genes, organisms, and areas. Systematic Biology 43: 58-77
- Page, R.D.M. (1994) Parallel phylogenies - reconstructing the history of host-parasite assemblages. Cladistics 10: 155-173
- Pielou, E. C. (1979) Biogeography. John Wiley and Sons; New York.
- Rosen, D. E. (1975) A vicariance model of Caribbean biogeography. Systematic Zoology 24: 431-464
- Rosen, D. E. (1978) Vicariant patterns and historical explanation in biogeography. Systematic Zoology 27: 159-188
- Rosen, D. E. (1979) Fishes from the upland and intermontane basins of Guatemala: revisionary studies and comparative geography. Bull. Amer. Mus. Nat. Hist. 162: 267-376
- \*\* Sanmartin, I.; Ronquist, F. (2002) New solutions to old problems: Widespread taxa, redundant distributions and missing areas in event-based biogeography. Animal Biodiversity and Conservation 25 : 75-93
- Siddall, M E. (1996) Phylogenetic covariance probability: Confidence and historical associations. Systematic Biology 45: 48-66
- Springer, V. G. (1982) Pacific plate biogeography, with special reference to shorefishes. Systematic Biology 45: 1-167
- Swenson, U. and K. Bremer. (1997) Pacific Biogeography of the Asteraceae genus *Abrotanella* (Senecioneae, Belnnospermatinae). Systematic Botany 22: 493-508
- \*\* van Veller, Marco G. P.; Brooks, D. R.; Zandee, M. (2003) Cladistic and phylogenetic biogeography: The art and the science of discovery. Journal of Biogeography 30 : 319-329
- Vermeij, G. J. (1978) Biogeography and adaptation. Harvard University Press; Cambridge.
- Wagner, W. L. and V. A. Funk (1995) Hawaiian biogeography: Evolution on a hot spot archipelago. Smithsonian Institution Press: Washington, DC.
- Weston, P H; Crisp, M D. (1994) Cladistic biogeography of waratahs (Proteaceae:Embothriiae) and their allies across the Pacific. Australian Systematic Botany 7: 225-249
- Wiley, E. O. (1981) Phylogenetics: the theory and practice of phylogenetic systematics. John Wiley and Sons, New York.

## Macroevolution

- Alroy, J. (2000) Understanding the dynamics of trends within evolving lineages. *Paleobiology* 26: 319-329
- Brooks, D. R. and D. A. McLennan. (1993) Comparative study of adaptive radiations with an example using parasitic flatworms (Platyhelminthes, Cercomeria). *Am. Nat.* 142: 755-778
- Charlesworth, B., R. Lande and M. Slatkin. (1982) A neo-Darwinian commentary on macroevolution. *Evolution* 36: 474-498
- Elbe, G. J. (2000) Contrasting evolutionary flexibility in sister groups: disparity and diversity in Mesozoic atelostomate echinoids. *Paleobiology* 26: 56-79
- Gilinsky, N.L. and I.J. Good. (1991) Probabilities of origination, persistence, and extinction of families of marine invertebrate life. *Paleobiology* 17: 145-66
- Gould, S. J. and N. Eldredge. (1977) Punctuated equilibria: the tempo and mode of evolution reconsidered. *Paleobiology* 3: 115-151
- Gould, S.J., N.L. Gilinsky & R.Z. German (1987) Asymmetry and the direction of evolutionary time. *Science* 236: 1437-1441
- Gould, S.J. (1991) The disparity of the Burgess Shale arthropod fauna and the limits of cladistic analysis: why we must strive to quantify morphospace. *Paleobiology* 17: 411-23
- Hey, J. (1992) Using phylogenetic trees to study speciation and extinction. *Evolution* 46: 627-640
- Jablonski, D., J.J. Sepkoski, Jr., D.J. Bottjer, and P.M. Sheehan. (1983) Onshore-offshore patterns in the evolution of Phanerozoic shelf communities. *Science* 222: 1123-1125
- Jablonski, D. (1986) Background and mass extinctions: the alternation of macroevolutionary regimes. *Science* 231: 129-133
- Jablonski, D. (1987) Heritability at the species level: Analysis of geographic ranges of cretaceous mollusks. *Science* 238: 360-363
- Jablonski, D. (2000) Micro- and macroevolution: scale and heirarchy in evolutionary biology and paleobiology. *Paleobiology* 26: 15-52
- Jeffery, C. H. (2001) Heart urchins at the Cretaceous/Tertiary boundary: a tale of two clades. *Paleobiology* 27: 104-125
- Kubo, T. and I. Y. (1995) Inferring the rates of branching and extinction from molecular phylogenies. *Evolution* 49: 694-704
- \*\* Lemen, C.A. and P.W. Freeman. (1989) Testing macroevolutionary hypotheses with cladistic analysis: evidence against rectangular evolution. *Evolution* 43: 1538-1554
- Levington, J. S. and C. M. Simon. (1980) A critique of the punctuated equilibria model and implications for the detection of speciation in the fossil record. *Systematic Zoology* 29: 130-142
- McShea, D. W. (2000) Trends, tools, and terminology. *Paleobiology* 26: 330-333
- \*\* Mindell, D. P., J. W. Sites Jr. and D. Graur. (1989) Speciation evolution: A phylogenetic test with allozymes in *Sceloporus* (Reptilia). *Cladistics* 5: 49-61
- Norris, R.D. (1991) Biased extinction and evolutionary trends. *Paleobiology* 17: 388-99
- Norris, R. D. (2000) Pelagic species diversity, biogeography, and evolution. *Paleobiology* 26: 236-258
- Patterson, C. and A.B. Smith (1987) Is the periodicity of extinctions a taxonomic artefact? *Nature* 330: 248-252 *and reply by Sepkoski*
- Raup, D.M. and J.J. Sepkoski (1986) Periodic extinction of families and genera. *Science*. 231: 833-836
- Robeck, H. E., C. C. Maley, and M. J. Donoghue. (2000) Taxonomy and temporal diversity patterns. *Paleobiology* 26: 171-187

- Rohde, K. (1996) Robust phylogenies and adaptive radiations: a critical evaluation of methods used to identify key innovations. *Am. Nat.* 148: 481-500
- Roopnarine, P. D., G. Byars, and P. Fitzgerald. (1999) Anagenetic evolution, stratophenetic patterns and random walk models. *Paleobiology* 25: 41-57
- Schopf, T. M. J. (1981) Punctuated equilibria and evolutionary stasis. *Paleobiology* 7: 156-166
- Shubin, N. H. and C. R. Marshall. (2000) Fossils, genes, and the origin of novelty. *Paleobiology* 26: 324-340
- Smith, A.B. & C. Patterson. (1988) The influence of taxonomic method on the perception of patterns of evolution. *Evolutionary Biology* 23: 127-216
- Smith, A. B. (1994) Systematics and the fossil record: documenting evolutionary patterns. Blackwell Scientific Publications, Oxford.
- Smith, L. H. and B. S. Lieberman. (1999) Disparity and constraint in the olenelloid trilobites and the Cambrian rasiation. *Paleobiology* 25: 459-470
- Stanley, S. M. (1982) Macroevolution and the fossil record. *Evolution* 36: 460-473
- Stidd, B. M. (1985) Are punctuationists wrong about the modern synthesis? *Phil. Sci.* 52: 98-109
- Van Valen, L.M. and V.C. Maiorana. (1985) Patterns of origination. *Evol. Theory* 7: 107-125
- Vrba, E.S. (1980) Evolution, species and fossils: how does life evolve? *S. Afr. J. Sci.* 76: 61-84
- Wagner, P.J. (1995) Stratigraphic tests of cladistics hypotheses. *Paleobiology* 21: 153-178
- Wagner, P.J. (1995) Diversity patterns among early gastropods: contrasting taxonomic and phylogenetic descriptions. *Paleobiology* 21: 410-439
- Wagner, P. J. (1996) Contrasting the underlying patterns of active trends in morphological evolution. *Evolution* 50: 990-1007
- Wagner, P. J. (2000) Exhaustion of morphologic character states among fossil taxa. *Evolution* 54: 365-386
- Williamson, P. G. (1981) Paleontological documentation of speciation in Cenozoic mollusks from Turkana Basin. *Nature* 293: 437-443

### Comparative Methods

- Brooks, D.R., & D. McLennan. (1991) *Phylogeny, Ecology, and Behavior*. University of Chicago Press.
- Burt, A. (1989) Comparative methods using phylogenetically independent contrasts. *Oxford Surveys in Evolutionary Biology* 6: 33-53
- Cheverud, J., and M. Dow. (1985) An autocorrelation analysis of the effect of lineal fission on genetic variation among social groups. *Amer. J. Phys. Anthropol.* 67: 113-121
- Cheverud, J. M., M. M. Dow, and W. Leutenegger. (1985) The quantitative assessment of phylogenetic constraints in comparative analyses: Sexual dimorphism in body weight among primates. *Evolution* 39: 1335-1351
- Cliff, A. D., and Ord, J. K. (1973) *Spatial Autocorrelation*. London: Pion.
- Coddington, J. (1988) Cladistic tests of adaptational hypotheses. *Cladistics* 4: 3-22
- de Queiroz, K. (1996) Including the characters of interest during tree reconstruction and the problems of circularity and bias in studies of character evolution. *Am. Nat.* 148: 700-708
- Donoghue, M.J. (1989) Phylogenies and analysis of evolutionary sequences, with examples from seed plants. *Evolution* 43: 1137-1156
- Felsenstein, J. (1985) Phylogenies and the comparative method. *Am. Nat.* 125: 1-15
- Funk, V.A. and D.R. Brooks. (1990) *Phylogenetic systematics as the basis of comparative biology*. Smithsonian Institution Press.

- Harvey, P.H. and M.D. Pagel. (1991) The comparative method in evolutionary biology. Oxford University Press.
- Martins, E. P. (1996) Phylogenies, spatial autoregression, and the comparative method: A computer simulation test. *Evolution* 50: 1750-1765
- Martins, E. P., and Hansen, T. F. (1997) Phylogenies and the comparative method: A general approach to incorporating phylogenetic information into the analysis of interspecific data. *Am. Nat.*
- Miles, D. B. and A. E. Dunham. (1993) Historical perspectives in ecology and evolutionary biology: the use of phylogenetic comparative analyses. *Annual Review of Ecology and Systematics* 24: 587-619
- Sillin-Tullberg, B. (1988) Evolution of gregariousness in aposematic butterfly larvae: a phylogenetic analysis. *Evolution* 42: 293-305
- Vogl, C., and G. P. Wagner. (1990) Interspecific variability in randomly evolving clades: models for testing hypotheses on the relative evolutionary flexibility of quantitative traits. *Systematic Zoology* 39: 109-123