

CURRICULUM VITAE

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EDUCATION:

Tufts University, B. S., 1969 (Biology)

Cornell University, Ph.D., 1975 (Ecology and Evolution)

EXPERIENCE:

Professor Emeritus, Department of Environmental Science and Policy, UC Davis, July 1 2013-present.

Professor, Department of Environmental Science and Policy, UC Davis, July 1 2005-2013.

Chair, Department of Environmental Science and Policy, UC Davis, July 1 2006-2011.

Professor, Department of Biology, University of Delaware, Sept. 1990-2005; Associate Professor, 1980-90;
Assistant Professor 1975-80.

Co-Chair (with B. A. Hawkins) of National Center for Ecological Analysis and Synthesis Working Group on
Predators, pathogens, and parasitoids as mortality agents in phytophagous insect
Populations, 1996-1998.

Co-chair (with S. Harrison and C. McCain) of National Center for Ecological Analysis and Synthesis
Working Group on The role of niche conservatism in producing biodiversity gradients, 2008-2010.

Co-chair (with G. Mittelbach and D. Schemski) of National Center for Ecological Analysis and Synthesis
Working Group on Gradients in biodiversity and speciation, 2005-2007.

Board of Editors, *Ecology Letters*. 2003-present.

Co-chair (with B. A. Hawkins) of National Center for Ecological Analysis and Synthesis Working Group on
Energy and geographic variation in species richness, 2000-2004.

Panel Member, Ecology Program, National Science Foundation; 1999-2001.

Official Academic Visitor, Centre for Population Biology, Imperial College at Silwood Park. 1990-94.

Visiting Scholar, University of Pennsylvania, Philadelphia. Sept.-Dec. 1985.

Academic Visitor, Imperial College at Silwood Park. Sept. 1982-June 1983.

Teaching Staff, Fern Mt. Ecology Program, Museum of Northern Arizona. Research-oriented program
supported by museum & restricted to graduate students. Summers 1981 and 1982.

Board of Editors, *Ecology and Ecological Monographs*. 1979-1982.

Research Assistant, Section of Ecology and Systematics, Cornell University. *Experimental Ecology*. 1971-1975.

RESEARCH INTERESTS:

Population and Community Ecology

Invasion Ecology

Ecology and Evolution of Insect-Plant and Parasite-Host Systems.

DISTINCTIONS

Fellow of the Ecological Society of America (elected 2016)

Thompson Reuters Highly Cited Researcher 2014, 2015

Anderson et al. 2011 recognized by “Faculty of 1000”

Currie et al. 2004 recognized by “Faculty of 1000”

Cornell and Lawton 1992 listed as one of the 100 influential papers published in 100 years of the British Ecological Society Journals 1913-2013.

Hawkins et al. 2003 listed as one of the top 50 notable papers published in *Ecology* for their Centennial Celebration 1915-2015 (CENTENNIAL SPECIAL: NOTABLE PAPERS: Ecology).

Co-chair of four NCEAS Working groups which since 1997 have produced four papers cited between 500 and 1200 times, and four papers cited between 200 and 500 times (Google Scholar).

GRANTS:

NSF and State of California, The role of niche conservatism in producing biodiversity gradients; NCEAS (with S. Harrison and C. McCain). \$56,600. 2008-2010.

U C Davis, Setup grants for research in the Department of Environmental Science and Policy. \$180,000. 2005-2008.

NSF and State of California, Gradients in biodiversity and speciation; NCEAS (with G. Mittelbach and D. Schemske). \$30,000. 2005-2007.

NSF and State of California, Energy and geographic variation in species richness; NCEAS (with B. A. Hawkins). \$34,880. 2000-2004.

NSF, Regional and local influences on species richness in coral communities across a Pacific diversity gradient (with R. Karlson). \$251,028. 2000-2005.

Australian Research Council, Community structure and biodiversity of coral reefs: local vs. regional effects (with R. Karlson, T. Hughes, C. Wallace, and J. Caley). AUS\$293,000. 1998-2001.

NSF, Regional and local influences on species richness in coral communities across a Pacific diversity

gradient (with R. Karlson, T. Hughes, C. Wallace and J. Caley). INT-9724759. \$60,000 1998-2001.

NSF, Direct and indirect effects on the trophic dynamics of holly leafminer populations. DEB-9628929. \$120,000. 1996-2001.

NSF and State of California, Predators, pathogens, and parasitoids as mortality agents in phytophagous insect populations; NCEAS (with B.A. Hawkins). \$9800.00 1996-1998.

NERC, Several travel and subsistence grants for collaborative research at the Centre for Population Biology, Imperial College, Silwood Park. approx. \$4500.00. 1990-98.

NSF, Three trophic level interactions in holly leafminer systems: BSR-8705338. \$157,829. 1987-1991.

NSF, Three trophic level interactions in holly leafminer systems: BSR-8500425. \$56,197. 1985-87.

NSF, Determinants of the richness-range pattern in gall-forming wasps on oak species: DEB 8022341. \$60,000. 1981-1984.

NSF, Determinants of the richness-range correlation in a guild of gall-forming wasps associated with oak species: DEB 7904755. \$25,300. 1979-1980.

TEACHING EXPERIENCE:

Seminar in Ecology (Graduate discussion).

Population Ecology (Graduate and upper-level undergraduate lecture and discussion.).

Plant Ecology (Graduate and undergraduate lecture and field lab).

Proseminar in Environmental Science (Upper-level undergraduate lecture and discussion).

General Ecology (Undergraduate lecture and lab).

Tropical Ecology (Undergraduate field course in Costa Rica and Jamaica).

Evolutionary Biology (Undergraduate lecture).

General Biology (Undergraduate lecture and lab).

Ecological Principles (Graduate core course in ecology)

SELECTED SYMPOSIA AND COLLOQUIA:

University of California, Irvine (Ecology and Evolutionary Biology), University of California, Davis (Ecology and Evolution), ESA Symposium, Albuquerque, NM, ESA Symposium, Memphis, TN, University of California, Santa Cruz (Ecology), University of California, Merced (Natural Science), University of California, Davis (Community Ecology), University of Utah (Biology), University of California, Davis (Ecology and Evolutionary Biology), San Francisco State (Biology), University of Maryland (Ecology),

University of Vermont (Biology), Dartmouth College (Biology), University of Missouri, St. Louis (Biology), University of Vermont (Biology), University of British Columbia (Zoology), University of California, Davis (Environmental Science), Bodega Marine Lab 10th Annual Colloquium, Cornell University (Entomology); University of Copenhagen (Zoology); Universite P et M Curie, Paris (Institut d=Ecologie).

PUBLICATIONS:

Google Scholar reports 80 total entries as of 4/2016, *h*-index of 41 and 9750 citations.

Cornell, H. V. 1974. Parasitism and distributional gaps between species. *American Naturalist* 108: 880-883.

Cornell, H. V. 1975. Search strategies and the adaptive significance of switching in some general predators. *American Naturalist* 110: 317-320.

Dritschilo, W., H. V. Cornell, D. Nafus and B. O'Connor. 1975. Insular Biogeography: Of mice and mites. *Science* 190: 467-469.

Cornell, H. V., L. E. Hurd and V. A. Lotrich. 1976. A measure of structural response to community perturbation. *Oecologia* 23: 335-342.

O'Connor, B., W. Dritschilo, D. Nafus and H. Cornell. 1977. Ectoparasitic mites on rodents: Application of the island biogeography theory. *Science* 195: 598.

Cornell, H. V. and D. Pimentel. 1978. Switching in the parasitoid *Nasonia vitripennis* and its effects on host competition. *Ecology* 59: 297-308.

Smith, H. V. and H. V. Cornell. 1979. Hopkins host selection in *Nasonia vitripennis* and its implications for sympatric speciation. *Animal Behavior* 27: 365-370.

Cornell, H. V. and J. O. Washburn. 1979. The richness-area correlation for cynipine galls on oak trees: a comparison of two geographic areas. *Evolution* 33: 257-274.

Washburn, J. O. and H. V. Cornell. 1979. Chalcid parasitoid attack on a gall wasp population on oak (*Acraspis hirta* Bassett, on *Quercus prinus*, Fagaceae). *Canadian Entomologist* 111: 391-400.

Washburn, J. O. and H. V. Cornell. 1981. Parasitoids, patches, and phenology: their possible role in the local extinction of a cynipid gall wasp population. *Ecology* 62: 1597-1607.

Lawton, J. H., H. V. Cornell, W. Dritschilo, and S. D. Hendrix. 1981. Species as islands. *American Naturalist* 117: 623-627.

Cornell, H. V. 1982. The notion of minimum distance, or why rare species are clumped. *Oecologia* 52: 278-280.

Cornell, H.V. 1983. Why and how gall wasps form galls: cynipids as genetic engineers? *Bulletin of the Royal Entomological Society of London* 8: 53-58.

Cornell, H. V. 1983. The secondary chemistry and complex morphology of galls formed by the cynipidae:

Why and how. *American Midland Naturalist*, 110: 225-234.

Kahn, D. and H. V. Cornell. 1983. Early leaf abscission: comments and considerations. *American Naturalist* 22: 428-432.

Cornell, H. V. 1984. Geographic texture of herbivore richness patterns on host plants. *Bulletin of the Entomological Society of America* 30: 6-15.

Cornell, H. V. 1985a. Local and regional richness of cynipine gall wasps on California oaks. *Ecology* 66: 1247-1260.

Cornell, H. V. 1985b. Species assemblages of cynipid gall wasps are not saturated. *American Naturalist* 126: 565-569.

Cornell, H. V. 1986. The influence of host plant size and species-centered attributes on cynipine richness on five California oak species. *Ecology* 67: 1582-1592.

Cornell, H. V. 1988. Solitary and gregarious brooding, sex ratios, and the incidence of thelytoky in the parasitic Hymenoptera. *American Midland Naturalist* 119: 63-70.

Cornell, H. V. 1989. Endophage-ectophage ratios and plant defense. *Evolutionary Ecology* 3: 64-76.

Cornell, H. V. and D. M. Kahn. 1989. Guild structure in the British arboreal arthropods: is it stable and predictable? *Journal of Animal Ecology* 58: 1003-1020.

Kahn, D. M. and H. V. Cornell. 1989. Leaf miners, early leaf abscission, and parasitoids: a tri-trophic interaction. *Ecology* 70: 1219-1226.

Cornell, H. V. 1990. Survivorship, life history, and concealment: a comparison of leaf miners and gall formers. *American Naturalist* 136: 581-597.

Cornell, H. V. and J. H. Lawton. 1992. Species interactions, local and regional processes, and limits to richness of ecological communities. *Journal of Animal Ecology* 61: 1-12. (*one of 100 most influential papers published by British Ecological Society journals 1913-2013*).

Marino, P. C. and H. V. Cornell. 1992. Adult movement of the native holly leaf-miner: consequences for host choice within and between habitats. *Oecologia* 92: 76-82.

Cornell, H. V. and B. A. Hawkins. 1993. Accumulation of native parasitoid species on introduced herbivores: a comparison of "hosts-as-natives" and "hosts-as-invaders". *American Naturalist* 141: 847-865.

Marino, P. C., H. V. Cornell, and D. M. Kahn. 1993. Environmental and clonal influences on host choice and larval survival in a leafmining insect. *Journal of Animal Ecology* 62: 503-510.

Cornell, H. V. 1993. Unsaturated patterns in phytophagous species assemblages: are there upper limits to species richness? Pages 243-252 in R. E. Ricklefs and D. Schluter, eds. *Species diversity in ecological communities*. University of Chicago Press, Chicago. 414 pp.

Marino, P. C. and H. V. Cornell. 1993. Adult feeding and oviposition of the native holly leafminer in response to leaf and tree phenology. *Environmental Entomology* 22: 1294-1301.

Cornell, H. V. and B. A. Hawkins. 1994. Patterns of parasitoid accumulation on introduced herbivores. Pages

77-89 in B. A. Hawkins and W. Sheehan, eds. Parasitoid community ecology. Oxford University Press, Oxford.

Hawkins, B. A. and H. V. Cornell. 1994. Maximum parasitism rates and successful biological control. *Science* 266: 1886.

Cornell, H. V. and B. A. Hawkins. 1995. Survivorship patterns and mortality sources of herbivorous insects: some demographic trends. *American Naturalist* 145:562-592.

Cornell, H. V. and R. H. Karlson. 1996. Species richness of reef-building corals determined by regional and local processes. *Journal of Animal Ecology* 65:233-241.

Karlson, R. and H. V. Cornell. 1997. Stability and Invasibility of coral communities. *Trends in Ecology and Evolution* 12: 195.

Marino, P. C., R. M. Eisenberg, and H. V. Cornell. 1997. Clonal growth and sexual reproduction in bloodroot (*Sanguinaria canadensis*): an experimental study. *Journal of the Torrey Botanical Society* 124: 219-227.

Hawkins, B. A., H. V. Cornell, and M. E. Hochberg. 1997. Predators, parasitoids and pathogens as mortality agents in phytophagous insect populations. *Ecology* 78: 2145-2152.

Karlson, R. and H. V. Cornell. 1997. Species diversity of hermatypic scleractinian corals: are local communities saturated? *Proceedings of the 6th International Conference on Coelenterate Biology* 1995: 287-293.

Cornell, H. V. and R. Karlson. 1997. Local and regional processes as controls of species richness. Pages 250-268 in D. Tilman and P. Kareiva, eds. *Spatial ecology: the role of space in population dynamics and interspecific interactions*. Monographs in Population Biology 29, Princeton University Press.

Karlson, R. and H. V. Cornell. 1998. Scale-dependent variation in local vs. regional effects on coral species richness. *Ecological Monographs* 68: 259-274.

Cornell, H. V. 1998. Evolutionary Ecology Across Three Trophic Levels (Book Review). *Quarterly Review of Biology* 73: 232-233.

Cornell, H. V., B. A. Hawkins, and M. Hochberg. 1998. Towards and empirically-based theory of herbivore demography. *Ecological Entomology* 23: 340-349.

Karlson, R. H. and H. V. Cornell. 1999. Integration of local and regional perspectives on the species richness of coral assemblages. *American Zoologist* 39: 104-112.

Hawkins, B. A. and H. V. Cornell (eds.). 1999. *Theoretical Approaches to Biological Control*. Cambridge University Press, Cambridge, UK.

Cornell, H. V. 1999. Unsaturation and regional influences on species richness in ecological communities: a review of evidence. *Ecoscience* 6(3):1-13.

Hugueny, B. and H. V. Cornell. 2000. Predicting the relationship between local and regional richness from a patch occupancy dynamics model. *Journal of Animal Ecology* 69:194-200.

Cornell, H. V. and R. H. Karlson. 2000. Coral species richness: ecological vs. biogeographic influences. *Coral Reefs* 19:37-49.

- Eber, S. H. P. Smith, R. K. Didham, and H. V. Cornell. 2001. Holly leafminers on two continents: what makes an outbreak species? *Ecological Entomology* 26:124-132.
- Cornell, H. V. 2001. Diversity, community/regional level. Pages 161-177 in S. Levin, ed. *Encyclopedia of Biodiversity*. Academic Press, San Diego.
- Karlson, R. H. and H. V. Cornell. 2002. Species richness of coral assemblages: detecting regional influences at local spatial scales. *Ecology* 83: 452-463.
- Baird, A. H., D. R. Bellwood, J. H. Connell, H. V. Cornell, T. P. Hughes, R. H. Karlson, and B. R. Rosen. 2002. Coral reef biodiversity and conservation (letter). *Science* 296: 1026-1028.
- Cornell, H. V. and B. A. Hawkins. 2003. Herbivore responses to plant secondary compounds: a test of phytochemical coevolution theory. *American Naturalist* 161: 507-522.
- Hawkins, B. A., R. Field, H. V. Cornell, D. J. Curie, J-F Guegan, D. M. Kaufman, J. T. Kerr, G. G. Mittelbach, T. Oberdorff, E. M. O'Brien, E. E. Porter, and J. R. G. Turner. 2003. Energy, water, and broad-scale geographic patterns of species richness. *Ecology* 84: 3105-3117. (*one of 50 notable papers published by Ecology since 1920*)
- Karlson, R. H., H. V. Cornell, and T. P. Hughes. 2004. Coral communities are regionally enriched along an oceanic biodiversity gradient. *Nature* 429: 867-870.
- Currie, D. J., G. G. Mittelbach, H. V. Cornell, R. Field, J-F Guégan, B. A. Hawkins, D. M. Kaufman, J. T. Kerr, T. Oberdorff, E. O'Brien, and J. R. G. Turner. 2004. Predictions and tests of climate-based hypotheses of broad-scale variation in taxonomic richness. *Ecology Letters* 7: 1121-1134. (*Selected and featured by Faculty of 1000*).
- Gross, P. A., B. A. Hawkins, H. V. Cornell, and B. Hosmane. 2005. Using lower trophic level factors to predict outcomes in classical biological control of insect pests. *Basic and applied ecology* 6: 581-584.
- Melbourne, B. A., H. V. Cornell, K. F. Davies, C. J. Dugaw, S. Elmendorf, A. Freestone, R. Hall, S. Harrison, A. Hastings, M. Holland, M. Holyoak, J. Lambrinos, K. Moore, and H. Yokomizo. 2007. Invasion in a heterogeneous world: resistance, coexistence or hostile takeover? *Ecology Letters* 10: 77-94.
- Karlson, R. H., H. V. Cornell, and T. P. Hughes. 2007. Aggregation influences coral species richness at multiple spatial scales. *Ecology* 88: 170-177.
- Hugueny, B., H. V. Cornell, and S. P. Harrison. 2007. Simple metacommunity models predict the local-regional species richness relationship in a natural system. *Ecology* 88: 1696-1706.
- Mittelbach, G., Schemske, D., Cornell, H., Allen, A., Brown, J., Bush, M., Harrison, S., Hurlbert, A., Knowlton, N., Lessios, H., McCain, C., McCune, A., McDade, L., McPeck, M., Near, T., Price, T., Ricklefs, R., Roy, K., Sax, D., Schluter, D., Sobel, J., and Turelli, M. 2007. Evolution and the Latitudinal Diversity Gradient: Speciation, Extinction, and Biogeography. *Ecology Letters* 10: 315-331.
- Cornell, H. V., R. H. Karlson, and T. P. Hughes. 2007. Scale dependent variation in coral community similarity across sites, islands, and regions. *Ecology* 88: 1707-1715.
- Harrison, S. P. and H. V. Cornell. 2007. Introduction: merging evolutionary and ecological approaches to understanding geographic gradients in species richness. *American Naturalist* 170: S1-S4.

- Nettle D., M. Choisy, H V. Cornell, J-F Guégan and M. E. Hochberg. 2007. Cultural diversity, economic development and societal instability. PLoS ONE 2(9): e929. doi:10.1371/journal.pone.0000929.
- Cornell, H. V., R. H. Karlson, and T. P. Hughes. 2008. Local-regional species richness relationships are linear at very small to large scales in west-central Pacific corals. *Coral Reefs* 27: 145-151.
- Harrison, S. P. and H. V. Cornell. 2008. Toward a better understanding of regional causes of local species richness. *Ecology Letters* 11: 969-979.
- Field, R., B. A. Hawkins, H. V. Cornell, D. J. Currie, J-F Guegan, D. M. Kaufman, J. T. Kerr, G. G. Mittelbach, T. Oberdorff, E. O'Brien, and J.R.G. Turner. 2008. Spatial species richness gradients across Scales: a meta-analysis. *Journal of Biogeography* 36: 132-147.
- Schemske, D. W., G. G. Mittelbach, H. V. Cornell, J. M. Sobel, and K. Roy. 2009. Is there a latitudinal gradient in the strength of biotic interactions? *Annual Review of Ecology, Evolution, and Systematics* 40: 245-269.
- Harrison, S. P., H. V. Cornell, and K.A. Moore. 2010. Spatial niches and coexistence: testing theory with tarweeds. *Ecology* 91: 2141-2150.
- Buckley, L. B., T. J. Davies, D. D. Ackerly, N. J. B. Kraft, S. P. Harrison, B. L. Anacker, H. V. Cornell, E. I. Damschen, J-A. Grytnes, B. A. Hawkins, C. M. McCain, P. R. Stephens, and J. J. Wiens. 2010. Phylogeny, niche conservatism and the latitudinal diversity gradient in mammals. *Proceedings of the Royal Society B* 277: 2131-2138.
- Wiens, J. J., D. D. Ackerly, A. P. Allen, B. L. Anacker, L. B. Buckley, H. V. Cornell, E. I. Damschen, T. J. Davies, J-A Grytnes, S. P. Harrison, B. A. Hawkins, R. D. Holt, C. M. McCain, and P. R. Stephens. 2010. Niche conservatism as an emerging principle on ecology and conservation biology. *Ecology Letters* 13: 1310-1324.
- Anderson, M. J., T. O. Crist, J. M. Chase, M. Vellend, B. D. Inouye, A. L. Freestone, N. J. Sanders, H. V. Cornell, L. S. Comita, K. F. Davies, S. P. Harrison, N. J. B. Kraft, J. C. Stegen, and N. G. Swenson. 2011. Navigating the multiple meanings of β diversity: a roadmap for the practicing ecologist. *Ecology Letters* 14:19-28. (*Selected and featured by Faculty of 1000*).
- Kraft, N. J. B., L. S. Comita, J. M. Chase, N. J. Sanders, N. G. Swenson, T. O. Crist, J. C. Stegen, M. Vellend, B. Boyle, M. J. Anderson, H. V. Cornell, K. F. Davies, A. L. Freestone, B. D. Inouye, S. P. Harrison, and J. A. Myers. 2011. Disentangling the drivers of β -diversity along latitudinal and elevational gradients. *Science* 333: 1755-1758 (*cover article*).
- Cornell, H. V. 2011. Niche overlap. Pages 489-497 in A. Hastings and L.J. Gross, eds. *Encyclopedia of Theoretical Ecology*, University of California Press, Berkeley, CA.
- Hawkins, B. A., C. M. McCain, T. J. Davies, L. B. Buckley, B. Anacker, H.V. Cornell, E. I. Damschen, J-A. Grytnes, S. Harrison, R. D. Holt, N. J. B.Kraft, and P. R. Stephens. 2012. Independent evolutionary pathways to climate-induced similarity of the global species richness gradients of birds and mammals? *Journal of Biogeography* 39: 825-841.
- Kraft, N. J. B., N. J. Sanders, J. C. Stegen, M. J. Anderson, T. O. Crist, , H. V. Cornell, M. Vellend, J. M. Chase, L. S. Comita, K. F. Davies, A. L. Freestone, S. P. Harrison, B. D. Inouye, J. A. Myers and N. G. Swenson. 2012. Response to comments on "Disentangling the drivers of β -diversity along latitudinal and elevational gradients." *Science* 335: 1573.

Stegen, J. C., Freestone, A. L., Crist, T. O., Anderson, M. J., Chase, J. M., Comita, L. S., Cornell, H. V., Davies, K. F., Harrison, S. P., Hurlburt, A. H., Inouye, B. D., Kraft, N. J. B., Myers, J. A., Sanders, N. J., Swenson, N. G. and Vellend, M. 2012. Stochastic and deterministic drivers of spatial and temporal turnover in breeding bird communities. *Global Ecology and Biogeography* 22: 202-212.

Cornell, H. V. 2013. Is regional species diversity bounded or unbounded? *Biological Reviews* 88: 140-165.

Cornell, H. V. and S. P. Harrison. 2013. Regional effects as important determinants of local diversity in both marine and terrestrial systems. *Oikos* 122:288-297.

Cornell, H. V. and S. P. Harrison. 2014. What is a regional species pool and when is it important? *Annual Review of Ecology, Evolution, and Systematics* 45: 45-67.

Hughes, T. P., D. R. Bellwood, S. R. Connolly, H. V. Cornell, and R. H. Karlson. 2014. Double jeopardy and global extinction risk in corals and reef fishes. *Current Biology* 24: 2946-2951.

Harrison, S., H. V. Cornell, and J. B. Grace. 2015. Does natural variation in diversity affect biotic resistance? *Journal of Ecology* 103: 1099-1106.

Case, E., S. P. Harrison, and H. V. Cornell. 2015. After an invasion: understanding variation in grassland community recovery following removal of a high-impact invader. *Biological Invasions* 18:371-380

Case, E., S. P. Harrison, and H. V. Cornell. 2015. Do high-impact invaders have the strongest negative effects on abundant and functionally similar resident species? *Functional Ecology* doi:10.1111/1365-2435.12615
