

Curriculum Vitae Robert Knight Colwell

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Education Ph.D. 1969 University of Michigan, Ann Arbor, MI, Ecology
 A.B. 1965 Harvard University, Cambridge, MA, Biology

Affiliations and Professional Experience

2012-Present	Museum Curator Adjoint in Entomology and Zoology, University of Colorado Museum of Natural History, Boulder
2014-Present	Distinguished Research Professor, University of Connecticut
2014-Present	Board of Trustees Distinguished Professor Emeritus, University of Connecticut
2014-Present	Professor e Pesquisador Visitante Especial, Universidade Federal de Goiás, Brazil
2010-Present	International Collaborator, Center for Macroecology, Evolution and Climate, The Natural History Museum of Denmark, University of Copenhagen, Denmark
2016-2021	Adjunct Professor, Tropical Forests and People Research Centre, University of the Sunshine Coast, Sippy Downs, Queensland, Australia
2001-2014	Board of Trustees Distinguished Professor, University of Connecticut
1989-2001	Professor, University of Connecticut
1982-1990	Professor, University of California at Berkeley
1976-1982	Associate Professor, University of California, Berkeley
1970-1976	Assistant Professor, University of California, Berkeley
1983-1985	Vice Chair, Department of Zoology, U.C., Berkeley
1982	Acting Chair, Department of Zoology, U.C., Berkeley
1969-1970	Ford Postdoctoral Fellow, University of Chicago
1967-1969	NSF Graduate Fellowship, University of Michigan
1965-1966	Curatorial Associate in Ethnobotany, Harvard University
2014 (Jan-April)	CAPES Science Without Borders Fellow, Universidade Federal de Goiás, Brazil
2010 (Jan-April)	Visiting Professor, University of Copenhagen, Denmark
2009 (Oct-Nov)	Visiting Professor, National Autonomous University of Mexico, Morelia, Mexico
2002 (Jan-July)	Visiting Scientist, Rainforest Cooperative Research Centre, James Cook University, Cairns, Queensland, Australia
1969-2015	Visiting Professor, Organization for Tropical Studies Costa Rica (16 courses; Course Coordinator, 1 course)
2000 (December)	Visiting Professor, Instituto Humboldt, Villa de Leyva, Colombia
1994 (Spring)	Visiting Professor, University of Colorado
1989 (Fall)	Visiting Professor, Arizona State University
1985 (Summer)	Visiting Professor, Michigan State University
1982 (Fall)	Visiting Professor, Uppsala Univ., Uppsala, Sweden
1973 (Summer)	Visiting Professor, University of Texas at Austin
1973 (Fall)	Visiting Professor, Universidad de Chile (Santiago)

Honors and Distinctions

Fellow, American Academy of Arts and Sciences, Elected 2011
 Fellow, Connecticut Academy of Arts and Sciences, Elected 1992
 Fellow, Connecticut Academy of Sciences and Engineering, Elected 2012
 Fellow, California Academy of Sciences, Elected 1986
 Fellow, American Association for the Advancement of Science, Elected 1986
 Fellow, Ecological Society of America, Elected 2012
 Fellow, American Society of Naturalists, Elected 1974

President's Award, American Society of Naturalists (for the best paper published in *The American Naturalist* in 2000), 2001

Distinguished Service Citation, Ecological Society of America, 1999

Distinguished Research Professor (UConn), 2014–Present

Distinguished Professor Emeritus (UConn), 2014–Present

Board of Trustees Distinguished Professor (UConn), 2001–2014

Alumni Association Faculty Research Award (UConn), 2000

Chancellor's Information Technology Award (U. Conn.), 1998

ComputerWorld/Smithsonian Information Technology Awards, Finalist, 1993

Huck Distinguished Lecturer in the Life Sciences, Pennsylvania State University, 2014

Invited Reviewer, 5th Assessment Report of the IPCC, Working Group II

Keynote Speaker, INTECOL, London, UK 2013

Invited Speaker, Sun Yat-Sen University, Guangzhou, China, 2011

Invited Speaker, Institute of Zoology, Chinese Academy of Sciences, Beijing, China, 2011

Keynote Speaker, International Biogeography Society, Heraklion, Crete, Greece, 2011

Invited Speaker, Royal Society, London, UK, October 2010

Keynote Speaker, Instituto de Ecología A.C. (INECOL) Student Colloquium, Xalapa, Mexico, 2010

Keynote Speaker, International Biogeography Society, Mérida, Mexico, 2009

Invited Speaker, National Academy of Science Sackler Colloquium, Irvine, CA 2008

Keynote Speaker, Zoological Society of London, UK, 2004

Invited Participant, First Okazaki Conference on Extinction, Okazaki, Japan, 2004

Keynote Speaker, Sociedad de Biología de Chile, Puyehue, Chile, 2003

Invited Speaker, International Congress of Acarology, Mérida, Mexico, 2002

Distinguished Lecturer, Universidad Nacional Autónoma de México, 1997

Helen P. Manglesdorf Distinguished Lecturer, University of North Carolina, 1990

Distinguished Visitor in Ecology, Arizona State University, 1989

GTE Foundation Lecturer, University of Florida, 1987

Distinguished Ecologist, Reed College, 1986

Distinguished Lecturer in Ecology, Michigan State University, 1981

Publication awards: *ISI Citation Classic* 1982 (Colwell and Futuyma 1971); *President's Award*, American Society of Naturalists (Colwell 2000); *ESI Hot New Paper in Environment and Ecology*, January 2002 (Colwell and Lees 2000); *National Museum of Natural History Science Achievement Award*, 2007 (Rahbek, Gotelli, Colwell, Entsminger, Rangel, and Graves); *ScienceWatch*, 20 Most-Cited Papers in Environment & Ecology, 1998–2008, October 2008 (Gotelli and Colwell 2001, the most cited paper in the history of *Ecology Letters*, as of 2011); the most cited paper in the history of *Journal of Plant Ecology*, as of 2019: Colwell et al. 2012.

As of February 2022: total citations > 66,000 (> 23,000 since 2017), *h*-Index 78 (59 since 2014), *i10* index 147 (110 since 2014).

Clarivate (*Web of Science*) Highly Cited Researcher, 2018 (Cross-Field category)

Participant in six NCEAS (National Center for Ecological Analysis and Synthesis) and NESCent (National Evolutionary Synthesis Center) Workshops, Co-Organizer of one; participant in a Kavli Workshop (Royal Society), October 2010

Invited lectures at universities and professional society meetings throughout the US, as well as in Canada, Mexico, Costa Rica, Panama, Colombia, Brazil, Chile, UK, Denmark, Sweden, Finland, Germany, Netherlands, Portugal, Spain, Switzerland, France, Italy, Tanzania, South Africa, Madagascar, Israel, Japan, Taiwan, China, Singapore, Indonesia, and Australia

Research featured: *New York Times* <https://www.nytimes.com/1995/05/02/science/hummingbirds-bear-mixed-gift-to-flowers-in-tropical-forest.html>

NPR *Science Friday* (2008): Global warming, elevational range shifts, and lowland biotic attrition in the wet tropics. *Science* 322:258–261.

Professional Service Highlights

President, American Society of Naturalists, 1998
 Vice-President, Ecological Society of America, 1994-1995
 Chair, MacArthur Award Committee, Ecological Society of America, 2002-2006
 Chair, Publications Committee, Ecological Society of America, 1995-1999
 Chair, Ecological Society of America, Special Committee on ESA Communications in the Electronic Age, 1994-1995
 Faculty of 1000, 2006-2016 (resigned)
 U. S. National Science Foundation, Ecology Review Panels, 2008 and 2012
 Scientific Advisory Committee, State of São Paulo, BIOTA/FAPESP, 1998-2008
 Advisory Committee, Parataxonomist Training Center, Madang, Papua New Guinea, 1999-Present
 Senior Consultant, Key Centre for Biodiversity and Bioresources, Macquarie University, Australia, 1999-Present
 Organization for Tropical Studies: Board of Directors, 1987-1989; La Selva Advisory Committee, 1986-1991; Research Committee, 1988-1996; 1998-Present; Informatics and Data Management Committee, 2002-Present; Assembly of Delegates, 1999-Present
 Keystone National Biotechnology Forum, Keystone, Colorado, 1986-1991
 US-Environmental Protection Agency, Biotechnology Science Advisory Committee, 1986-1989
 U.S. National Committee of International Union of Biological Scientists (Appointed by the National Academy of Sciences), 1985-1991

Editorial Service

Editor in Chief for Reviews and Syntheses, *Ecography*, 2014-present
 Review and Synthesis Editor, *Ecography*, 2006-2013
 Board of Reviewing Editors, *Science*, 2002-2005
 Associate Editor, *Encyclopedia of Biodiversity*, 1999-2012
 Editor, *Evolutionary Ecology Research*, 1998-Present
 Editor, *Evolutionary Ecology*, 1986-1998
 Associate Editor, *Biotropica*, 1993-1996
 Associate Editor, *The American Naturalist*, 1980-1985; 1990-1994
 Editorial Board, *Evolutionary Theory*, 1973-1990

Teaching

Research teaching

Research advisor (major professor) for 27 completed Ph.D.s (19 at U. C. Berkeley, 7 at UConn, 1 at U. Federal de Goiás, Brazil) and 4 completed Masters (2 at Berkeley, 2 at UConn).

Former students hold (or have retired from) positions at (alphabetically within categories): California State U.–Los Angeles, Columbia U., Harvard U., North Carolina State U., Occidental College, U. California Berkeley, Organization for Tropical Studies, U. California Irvine, U. California Santa Cruz, U. Católica (Chile), U. Hawaii, U. Maine, U. Missouri-St., Louis, U. Puerto Rico, U. Washington, U.S. Air Force Academy, American Museum of Natural History, Conservation International, NASA, USDA, US-EPA, CSIRO (Australia), Universidade Federal de Goiás (Brasil), and the United Nations (UNDP)

Recent classroom teaching (until 2013)

Until retirement from teaching in 2013, at UConn: General Ecology (undergraduate level), Population and Community Ecology (graduate core course), Evolution and Ecology of Communities (graduate level), Biodiversity Graduate Seminar
 Since 2013: Graduate Seminar in Biogeography (Universidade Federal de Goiás, Brazil); lectures in Cross-disciplinary Palaeo-Environmental Research Training (XPert) Network Summer School, U. Amsterdam

Languages

Spanish (fluent reading, writing, and conversation), Portuguese (fluent reading, writing, and conversation), French (fluent reading, adequate in conversation)

Research Funding

Continuous research funding from NSF/NIH/CAPES from 1970 through 2015

Most recent research awards:

2006-2010, NSF DEB- "Integrating Ecological and Evolutionary Processes in Stochastic Biogeographical Models" (P.I. and Project Director, \$207,566)

2009-2012, NSF DBI-0851290, "Extending Lifemapper to Enable Macroecological Research" (PI, \$151,415). Collaborative Research with James Beach, University of Kansas.

2013-2015, CAPES (Brazilian Federal Agency for the Support and Evaluation of Graduate Education) "Science Without Borders" Fellowship, 3 years, for research collaboration and graduate education in Brazil (\$20,000 per year)

Non-research award: NSF Graduate Research Training Program (1995-1999): \$555,000 Lead P.I.

Research

Interests Species diversity, biogeography, and mechanisms of speciation
Stochastic models in biogeography
Evolutionary ecology, species interactions, and coevolution
Ecology, evolution, and behavior of hummingbird flower mites
Global change biology
Biodiversity inventories, databases, and statistical tools

Research Websites Species richness estimation and similarity (<http://purl.oclc.org/EstimateS>)
Arthropods of La Selva inventory (<http://purl.oclc.org/alas>)
Null models in biogeography (<http://purl.oclc.org/RangeModel>)
Biodiversity informatics (<http://viceroy.colorado.edu/Biota/>)

Publications (peer-reviewed)***Edited Books***

Levin, S., Ed., R. K. Colwell, G. Daily, L. J., H. A. Mooney, E. Schulze, and D. Tilman, Assoc. Eds. 2000. Encyclopedia of biodiversity. Academic Press, NY. (5 volumes, 4666 pp.) [Ed. for 25 articles on invertebrates.]

Levin, S., Ed., R. K. Colwell, G. Daily, S. Diaz, P. Kareiva, D. Karl, G. M. Mace, C. Perrings, D. Tilman, and M. G. Turner, Assoc. Eds. 2013. Encyclopedia of biodiversity, 2nd Edition. Academic Press, NY. [Ed. for 10 new articles and 25 revised articles]

Monograph

Naskrecki, P., and R. K. Colwell. 1998. Systematics and host plant affiliations of hummingbird flower mites of the genera *Tropicoseius* Baker and Yunker and *Rhinoseius* Baker and Yunker (Acari: Mesostigmata: Ascidae). Thomas Say Publications in Entomology: Monographs. Entomological Society of America. 185 pp.

Journal Publications

(Peer-reviewed. Reverse chronological order, alphabetical by author within years. Peer-reviewed book chapters follow in a separate section.)

Colwell, R. K. 2021. Spatial scale and the synchrony of ecological disruption. *Nature* **599**:E8-E10.

Thomas, D. H., and R. K. Colwell. 2020. Class richness: sample-based and coverage-based approaches. Pages 776-812 in D. H. Thomas, *Alpine archaeology of Alta Toquima and the Mt. Jefferson Tablelands (Nevada)*. Anthropological Papers of the American Museum of Natural

- History, Number 104. American Museum of Natural History, New York.
- Chao, A., Y. Kubota, D. Zelený, C. H. Chiu, C. F. Li, B. Kusumoto, M. Yasuhara, S. Thorn, C. L. Wei, M. J. Costello, and R. K. Colwell. 2020. Quantifying sample completeness and comparing diversities among assemblages. *Ecological Research* **35**:292-314.
- Longino, J. T., and R. K. Colwell. 2020. The arboreal ants of a Neotropical rain forest show high species density and comprise one third of the ant fauna. *Biotropica* **52**:675-685.
- Brehm, G., D. Zeuss, and R. K. Colwell. 2019. Moth body size increases with elevation along a complete tropical elevational gradient for two hyperdiverse clades. *Ecography* **42**:632-642.
- Chao, A., R. K. Colwell, N. J. Gotelli, and S. Thorn. 2019. Proportional mixture of two rarefaction/extrapolation curves to forecast biodiversity changes under landscape transformation. *Ecology Letters* **22**:1913-1922.
- Pacheco Coelho, M. T., E. B. Pereira, H. J. Haynie, T. F. Rangel, P. Kavanagh, K. R. Kirby, S. J. Greenhill, C. Bowern, R. D. Gray, and R. K. Colwell. 2019. Drivers of geographical patterns of North American language diversity. *Proceedings of the Royal Society B* **286**:20190242.
- Sonne, J., T. B. Zanata, A. M. Martín González, N. L. Cumbicus Torres, J. Fjeldså, R. K. Colwell, B. A. Tinoco, C. Rahbek, and B. Dalsgaard. 2019. The distributions of morphologically specialized hummingbirds coincide with floral trait matching across an Andean elevational gradient. *Biotropica* **51**:205-218.
- Chan, W. P., I. C. Chen, R. K. Colwell, W. C. Liu, C. y. Huang, and S. F. Shen. 2018. Response to Qian et al.(2017): Daily and seasonal climate variations are both critical in the evolution of species' elevational range size. *Journal of Biogeography* **45**:2832-2836.
- Connolly, S. R., S. A. Keith, R. K. Colwell, and C. Rahbek. 2018. Mechanism, process, and causation in ecological models: A reply to McGill and Potochnik. *Trends in Ecology & Evolution* **33**:305-306.
- Rangel, T. F., N. R. Edwards, P. B. Holden, J. A. F. Diniz-Filho, W. D. Gosling, M. T. P. Coelho, F. A. S. Cassemiro, C. Rahbek, and R. K. Colwell. 2018. Modeling the ecology and evolution of biodiversity: Biogeographical cradles, museums, and graves. *Science* **361**:eaar5452.
- Beck, J., C. M. McCain, J. C. Axmacher, L. A. Ashton, F. Bärtschi, G. Brehm, S. W. Choi, O. Cizek, R. K. Colwell, K. Fiedler, C. L. Francois, S. Highland, J. D. Holloway, J. Intachat, T. Kadlec, R. L. Kitching, S. C. Maunsell, T. Merckx, A. Nakamura, E. Odell, W. Sang, P. S. Toko, J. Zamecnik, Y. Zou, and V. Novotny. 2017. Elevational species richness gradients in a hyperdiverse insect taxon: a global meta-study on geometrid moths. *Global Ecology and Biogeography* **26**:412-424.
- Bonebrake, T. C., C. J. Brown, J. D. Bell, J. L. Blanchard, A. Chauvenet, C. Champion, I.-C. Chen, T. D. Clark, R. K. Colwell, and F. Danielsen. 2017. Managing consequences of climate-driven species redistribution requires integration of ecology, conservation and social science. *Biological Reviews* **93**:284-305.
- Buchanan, B., A. Chao, C.-H. Chiu, R. K. Colwell, M. J. O'Brien, A. Werner, and M. I. Eren. 2017. Environment-induced changes in selective constraints on social learning during the peopling of the Americas. *Scientific Reports* **7**:44431.
- Chao, A., C. H. Chiu, R. K. Colwell, L. F. S. Magnago, R. L. Chazdon, and N. J. Gotelli. 2017. Deciphering the enigma of undetected species, phylogenetic, and functional diversity based on Good-Turing theory. *Ecology* **98**:2914-2929.
- Chao, A., and R. K. Colwell. 2017. Thirty years of progeny from Chao's inequality: Estimating and comparing richness with incidence data and incomplete sampling. *Statistics and Operations Research Transactions (SORT)* **41**:1-52.
- Chao, A., R. K. Colwell, C. H. Chiu, and D. Townsend. 2017. Seen once or more than once: applying Good-Turing theory to estimate species richness using only unique observations and a species list. *Methods in Ecology and Evolution* **8**:1221-1232.
- Connolly, S. R., S. A. Keith, R. K. Colwell, and C. Rahbek. 2017. Process, mechanism, and modeling in macroecology. *Trends in Ecology and Evolution* **32**:835-844.

- Gavin, M. C., T. F. Rangel, C. Bown, R. K. Colwell, K. R. Kirby, C. A. Botero, M. Dunn, R. R. Dunn, J. McCarter, M. T. Pacheco Coelho, and R. D. Gray. 2017. Process-based modelling shows how climate and demography shape language diversity. *Global Ecology and Biogeography* **26**:584-591.
- Pecl, G. T., M. B. Araújo, J. D. Bell, J. Blanchard, T. C. Bonebrake, I.-C. Chen, T. D. Clark, R. K. Colwell, F. Danielsen, B. Evengård, et al. 2017. Biodiversity redistribution under climate change: Impacts on ecosystems and human well-being. *Science* **355**:eaai9214.
- Brehm, G., P. D. Hebert, R. K. Colwell, M.-O. Adams, F. Bodner, K. Friedemann, L. Möckel, and K. Fiedler. 2016. Turning up the heat on a hotspot: DNA barcodes reveal 80% more species of geometrid moths along an Andean elevational gradient. *PLoS One* **11**:e0150327.
- Chan, W.-P., I.-C. Chen, R. K. Colwell, W.-C. Liu, C.-y. Huang, and S.-F. Shen. 2016. Seasonal and daily climate variation have opposite effects on species elevational range size. *Science* **351**:1437-1439.
- Colwell, R. K. 2016. Foreword. Pages 9-10 in T. Robillard, F. Legendre, C. Villemant, and M. Leponce, editors. *Insects of Mount Wilhelm Papua New Guinea*. Mémoires du Muséum national d'Histoire naturelle, Paris.
- Colwell, R. K., N. J. Gotelli, L. A. Ashton, J. Beck, G. Brehm, T. M. Fayle, K. Fiedler, M. L. Forister, M. Kessler, R. L. Kitching, P. Klimes, J. Kluge, J. T. Longino, S. C. Maunsell, C. McCain, J. Moses, S. Noben, K. Sam, L. Sam, A. M. Shapiro, X. Wang, and V. Novotny. 2016. Midpoint attractors and species richness: Modeling the interaction between environmental drivers and geometric constraints. *Ecology Letters* **19**:1009–1022.
- Cayuela, L., R. K. Colwell, and N. J. Gotelli. 2015. Ecological and biogeographic null hypotheses for comparing rarefaction curves. *Ecological Monographs* **85** 437-455.
- Chao, A., T. C. Hsieh, R. L. Chazdon, R. K. Colwell, and N. J. Gotelli. 2015. Unveiling the species-rank abundance distribution by generalizing the Good-Turing sample coverage theory. *Ecology* **96**:1189–1201.
- Eren, M. I., A. Chao, C. Chiu, R. K. Colwell, B. Buchanan, M. T. Boulanger, J. Darwent, and M. J. O'Brien. 2015. Statistical analysis of paradigmatic class richness supports greater Paleoindian projectile-point diversity in the Southeast. *American Antiquity*.
- Rangel, T. F., R. K. Colwell, G. R. Graves, K. Fučíková, C. Rahbek, and J. A. F. Diniz-Filho. 2015. Phylogenetic uncertainty revisited: Implications for ecological analyses. *Evolution* **69**:1301-1312.
- Slik, J. F., ..., R. K. Colwell, and 147 additional authors. 2015. An estimate of the number of tropical tree species. *Proceedings of the National Academy of Sciences* **112**:7472-7477.
- Bates, A. E., G. T. Peci, S. Frusher, A. J. Hobday, T. Wernberg, D. A. Smale, J. M. Sunday, N. A. Hill, N. K. Dulvy, and R. K. Colwell. 2014. Defining and observing stages of climate-mediated range shifts in marine systems. *Global Environmental Change* **26**:27-38.
- Chao, A., N. J. Gotelli, T. C. Hsieh, E. L. Sander, K. H. Ma, R. K. Colwell, and A. M. Ellison. 2014. Rarefaction and extrapolation with Hill numbers: a framework for sampling and estimation in species diversity studies. *Ecological Monographs* **84**:45–67.
- Colwell, R. K. and J. E. Elsensohn. 2014. EstimateS turns 20: statistical estimation of species richness and shared species from samples, with non-parametric extrapolation. *Ecography* **37**:609-613.
- Longino, J. T., M. G. Branstetter, and R. K. Colwell. 2014. How ants drop out: ant abundance on tropical mountains. *PLoS One* **9**:e104030.
- Sunday, J. M., A. E. Bates, M. R. Kearney, R. K. Colwell, N. K. Dulvy, J. T. Longino, and R. B. Huey. 2014. Thermal-safety margins and the necessity of thermoregulatory behavior across latitude and elevation. *Proceedings of the National Academy of Sciences* **111**:5610-5615.
- Wu, Y., R. K. Colwell, N. Han, R. Zhang, W. Wang, Q. Quan, C. Zhang, G. Song, Y. Qu, and F. Lei. 2014. Understanding historical and current patterns of species richness of babblers along a 5000-m subtropical elevational gradient. *Global Ecology and Biogeography* **23**:1167-1176.

- Gavin, M. C., C. A. Botero, C. Bower, R. K. Colwell, M. Dunn, R. R. Dunn, R. Gray, K. R. Kirby, J. McCarter, A. Powell, T. F. Rangel, J. R. Stepp, M. Trautwein, J. L. Verdolin, and G. Yanega. 2013. Towards a mechanistic understanding of linguistic diversity. *Bioscience* 63:524-535.
- Wu, Y., R. K. Colwell, C. Rahbek, C. Zhang, Q. Quan, C. Wang, and F. Lei. 2013. Explaining the species richness of birds along a subtropical elevational gradient in the Hengduan Mountains. *Journal of Biogeography* 40:2310-2323.
- Colwell, R. K., R. R. Dunn, and N. C. Harris. 2012. Coextinction and persistence of dependent species in a changing world. *Annual Review of Ecology, Evolution and Systematics* 43:183-203.
- Dornelas, M., A. E. Magurran, S. T. Buckland, A. Chao, R. L. Chazdon, R. K. Colwell, T. Curtis, K. J. Gaston, N. J. Gotelli, and M. A. Kosnik. 2012. Quantifying temporal change in biodiversity: challenges and opportunities. *Proceedings of the Royal Society B: Biological Sciences* 280 (1750).
- Eren, M. I., A. Chao, W. H. Hwang, and R. K. Colwell. 2012. Estimating the richness of a population when the maximum number of classes is fixed: a nonparametric solution to an archaeological problem. *PLoS One* 7(5):e34179-e34179.
- Colwell, R. K., A. Chao, N. J. Gotelli, S.-Y. Lin, C. X. Mao, R. L. Chazdon, and J. T. Longino. 2012. Models and estimators linking individual-based and sample-based rarefaction, extrapolation, and comparison of assemblages. *Journal of Plant Ecology* 5:3-21.
- Gotelli, N. J., A. Chao, R. K. Colwell, W. H. Hwang, and G. R. Graves. 2012. Specimen-based modeling, stopping rules, and the extinction of the Ivory-billed Woodpecker. *Conservation Biology* 26:47-56.
- Chazdon, R. L., A. Chao, R. K. Colwell, S.-Y. Lin, N. Norden, S. G. Letcher, D. B. Clark, B. Finegan, and J. P. Arroyo. 2011. A novel statistical method for classifying habitat generalists and specialists. *Ecology* 92:1332-1343.
- McCain, C. and R. K. Colwell. 2011. Assessing the threat to montane biodiversity from discordant shifts in temperature and precipitation in a changing climate. *Ecology Letters* 14:1236-1245.
- Rahbek, C. and R. K. Colwell. 2011. News and Views: Species loss revisited. *Nature* 473:288-289.
- Longino, J. T. and R. K. Colwell. 2011. Density compensation, species composition, and richness of ants on a neotropical elevational gradient. *Ecosphere* 2(3):art29. doi:10.1890/ES10-00200.1
- Colwell, R. K. and T. F. Rangel. 2010. A stochastic, evolutionary model for range shifts and richness on tropical elevational gradients under Quaternary glacial cycles. *Philosophical Transactions of the Royal Society B*. 365: 3695-3707.
- Chao, A., R. K. Colwell, C.-W. Lin, and N. Gotelli. 2009. Sufficient sampling for asymptotic minimum species richness estimators. *Ecology* 90:1125-1133.
- Colwell, R. K., N. J. Gotelli, C. Rahbek, G. L. Entsminger, C. Farrell, and G. R. Graves. 2009. Peaks, plateaus, canyons, and craters: The complex geometry of simple mid-domain effect models. *Evolutionary Ecology Research* 11:355-370.
- Colwell, R. K. and T. F. Rangel. 2009. Hutchinson's duality: the once and future niche. *PNAS* 106: 19651-19658.
- Dunn, R. R., N. C. Harris, R. K. Colwell, L. P. Koh, and N. S. Sodhi. 2009. The sixth mass coextinction: are most endangered species parasites and mutualists? *Proceedings of the Royal Society B: Biological Sciences* 276:3037-3045.
- Gotelli, N., M. J. Anderson, H. T. Arita, A. Chao, R. K. Colwell, S. R. Connolly, D. J. Currie, R. R. Dunn, G. R. Graves, J. L. Green, J. A. Grytnes, Y.-H. Jiang, W. Jetz, S. K. Lyons, C. M. McCain, A. E. Magurran, C. Rahbek, T. F. L. V. B. Rangel, J. Soberón, C. O. Webb, and M. R. Willig. 2009. Patterns and causes of species richness: a general simulation model for macroecology. *Ecology Letters* 12:873-886.
- Kumar, A., J. T. Longino, R. K. Colwell, and S. O'Donnell. 2009. Elevational patterns of diversity and abundance of eusocial paper wasps (Vespidae) in Costa Rica. *Biotropica* 41:338-346.

- Stork, N. E., J. A. Coddington, R. K. Colwell, R. L. Chazdon, C. W. Dick, C. A. Peres, S. Sloan, and K. Willis. 2009. Vulnerability and resilience of tropical forest species to land-use change. *Conservation Biology* 23:1438-1447.
- Carranza, A., R. K. Colwell, and T. F. L. V. B. Rangel. 2008. Distribution of megabenthic gastropods along environmental gradients: the mid-domain effect and beyond. *Marine Ecology Progress Series* 367:193-202.
- Colwell, R. K. 2008. RangeModel: Tools for exploring and assessing geometric constraints on species richness (the mid-domain effect) along transects. *Ecography* 31:4-7.
- Colwell, R. K., G. Brehm, C. Cardelús, A. C. Gilman, and J. T. Longino. 2008. Global warming, elevational range shifts, and lowland biotic attrition in the wet tropics. *Science* 322:258-261.
- Sodhi, N. S., L. P. Koh, K. S.-H. Peh, H. T. W. Tan, R. L. Chazdon, R. T. Corlett, T. Lee, M., R. K. Colwell, B. W. Brook, C. H. Sekercioglu, and C. J. A. Bradshaw. 2008. Correlates of extinction proneness in tropical angiosperms. *Diversity and Distributions* 14:1-10.
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