

CURRICULUM VITAE FOR NEO D. MARTINEZ

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CURRENT POSITIONS:

Associate Professor

Ecology and Evolutionary Biology Dept., University of Arizona
Affiliate Member, Applied Mathematics Program, U. of Arizona

Director and President

Pacific Ecoinformatics and Computational Ecology Lab (Berkeley)

Affiliated Researcher

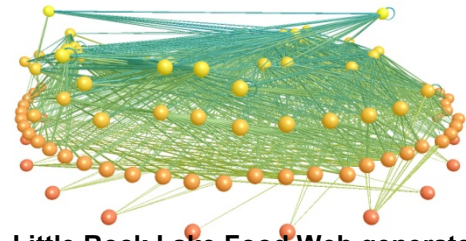
Energy and Resources Group, University of California at Berkeley

Co-Founder & Environmental Committee Chair

Data-Enabled Life Science Alliance (DELSAglobal.org)

Co-Organizer along with R. D'Souza

NetSci2014: The International Network Science Conference



**Little Rock Lake Food Web generated
by our FoodWeb3D software**

EDUCATION:

Institution	Degree	Year(s)	Scientific Field
Cornell University	B.S.	1984	Biology/Ecology
Ctr. for Limnology U. WI Madison	M.S.	1988	Oceanography & Limnology
Energy & Resources, UC Berkeley	M.S. Ph.D.	1989, 1991	Theoretical&Aquatic Ecology
Bodega Marine Lab, UC Davis	Postdoc	1992-96	Ecology
UK Centre for Population Biology	Postdoc	1992-96	Ecology
Rocky Mountain Biological Lab	Postdoc	1992-96	Aquatic Ecology

PROFESSIONAL EXPERIENCE:

1987 – 1988	Staff Computer Specialist, Energy and Resources Group, U. C. Berkeley
1990 – 1991	Instructor, Sierra College, Rocklin, CA
1992	Senior Research Associate, Lawrence Berkeley Laboratory
1992	Postgraduate Researcher V, Bodega Marine Lab, U. C. Davis
1992 – 1996	Visiting Scientist, UK Centre for Population Biology, Imperial College
1993 – 1996	Research Fellow, Bodega Marine Lab, U. C. Davis
1992 – 2009	Principle Investigator, Rocky Mountain Biological Laboratory
1996 – 2001	Assistant Professor, Romberg Tiburon Center for Environmental Studies, Department of Biology, San Francisco State University
1997 – Present	Affiliated Faculty, Energy and Resources Group, U. C. Berkeley
1998 – 2002	Trophic and Community Dynamics Prospectus Developer of the Ecosystem Process Conceptual Model for the Sierra Nevada Monitoring Team, US Forest Service, South Lake Tahoe, CA
2001	Visiting Scientist, UK Centre for Population Biology, Imperial College
2001	Visiting Scientist, Santa Fe Institute, Santa Fe, New Mexico
2002 – 2003	Visiting Professor of Nonlinear Systems, Cornell University
2003 – Present	Director, Pacific Ecoinformatics and Computational Ecology Lab
2004 – 2010	Lecturer, Complex Systems Summer School, Santa Fe Institute, NM

- 2005 – Present Network Workbench Advisory Board Member, NSF funded Informatics project based at Univ. of Indiana Directed by Katy Börner
- 2006 – 2007 Center Fellow, National Center for Ecological Analysis and Synthesis
- 2008 – 2010 Elected to the Board of Directors of the Society for the Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS).
- 2008 – 2009 Marie Currie Senior Research Fellow, Ecology and Ecological Modelling Department, Potsdam University, Potsdam, Germany
- 2009 American Association for the Advancement of Science (AAAS)/SACNAS Summer Leadership Institute participant
- 2009 – 2010 Strategic Planning Committee member, Energy & Resources Grp. UC Berk.
- 2011– Present Co-Founder of the Data-Enabled Life Science Alliance (DELSA)
- 2013– Present Associate Professor of Ecology and Evolutionary Biology U. of Arizona

Life time member of Ecological Society of America (ESA) and the Society for the Advancement of Chicanos, Hispanics, and Native Americans in Science (SACNAS).

HONORS AND AWARDS:

- 1992 Ford Foundation Postdoctoral Fellow
- 1993-1996 National Science Foundation Postdoctoral Fellow
- 1999 Interviewed Biodiversity Faculty Candidate. Zoology Dept. Oxford University, UK
- 2000 Keynote speaker at the Annual New Zealand Ecological Society meeting 10-21-00
- 2002-2003 IGERT Visiting Professor of Nonlinear Systems, Cornell University
- 2004 Plenary address to the 4th International Conference on Complex Systems. Boston
- 2004 Plenary address to the Annual Society for Industrial and Applied Mathematics (SIAM) Conference in Portland, OR.
- 2005 Keynote speaker to the Supercomputing Challenge Conference, Glorieta, NM
- 2006 Invited “Masterwork” presentation sponsored by the National Science Foundation at the International Supercomputing Conference in Tampa, Florida.
- 2006-2007 Center Fellow, National Center for Ecological Analysis and Synthesis (NCEAS)
- 2007 Nominated for the E.O. Lawrence Award given by the U.S. Department of Energy
- 2007 “Diversity and Complexity of Ecosystems” video by Martinez & Ilmi Yoon won 2nd Place in the “Visualizing Network Dynamics” competition of International Conference on Network Science. Viewed >18,000 times.
- 2008 Featured "Pioneering Ecologists:" J. Woodward, A. Leopold, R. Patrick, E. Odum, J. Lubchenko, N. Martinez & M. Miranda by D.J. Housel. Life Science Reader introduction to ecology. Sally Ride Science & Teacher Created Materials Publishing.
- 2008-2010 Elected to the Board of Directors, Society for the Advancement of Chicanos and Native Americans in Science (SACNAS)
- 2009 Santa Fe Institute Complex Systems Summer School Lectures on Ecological Complexity chosen to be included in the Institute’s iTunes U contributions
- 2009 Amer. Assoc. for the Advancement of Science/SACNAS Leadership Institute Fellow
- 2009 Keynote Speaker, "Advances in Complex Networks" symposium. Harnack Haus, Berlin, Germany. September 28.
- 2010 Invited presentation to the National Academy of Sciences Board meeting on Innovation in Computing and Information Technology for Sustainability.
- 2012 Complex Systems Seminar Series Distinguished Speaker Northwestern University
- 2013 One of Wired magazine's 10 Best Scientific Visualizations of 2013: Dunne et al. 2013

Network Visualization: Our lab's scientific visualization software is very widely used to illustrate ecological complexity and network structure among many other concepts in research and popular presentations around the world (see page 1 of CV). High-profile publications of such images generated by our lab's FoodWeb3D and NetWork3D software include:

- One of Wired magazine's 10 Best Scientific Visualizations of 2013
- Conquest et al. 2013. "Darwin's Extra Sense" 39 minute documentary.
- Editor. 2012. Eat or Be Eaten. News of the Week. *Science* 335:898.
- Travis. J. 2012. No Omnivore's Dilemma for Alaskan Hunter-Gatherers. *Science Now*.
- 2012 The Dwindling Web: How Human Exploitation has Reshaped a Marine Ecosystem. *Scientific American* (Graphic Science).
- Brown, L.E., et al. 2011. Food web complexity and allometric scaling relationships in stream mesocosms. *Journal of Animal Ecology* 80:884-895.
- Newman, M.E.J. 2010. Networks: An Introduction. Oxford Univ. Press. 772 pages. Plate II and Fig. 1.3. One of only 4 color figures within the foremost text book on networks.
- Bascompte, J. 2009. Disentangling the web of life. *Science* 325:416-419.
- Pennisi, E. 2008. Paleoecology: Fossils help figure out food webs old and new. *Science* 320:598-599.
- Thompson, J.N. 2006. Mutualistic webs of species. *Science* 312: 372-373.
- Pascual, M. 2005. Computational ecology: from the complex to the simple and back. *PLoS Computational Biology* 1(2): e18 (p101-105).
- Green, J.L., et al. 2005. Complexity in ecology and conservation: mathematical, statistical, and computational challenges. *BioScience* 55:501-510.
- Newman, M.E.J. 2003. The structure and function of complex networks. *SIAM Review* 45:167-256.
- McMahon, S.M., et al. 2001. Social science and ecology—networking tips for social scientists and ecologists. *Science* 293: 1604-1605.
- Strogatz, S.H. 2001. Exploring complex networks. *Nature* 410: 268-275.

Popular Coverage of Research:

- 2013 One of Wired magazine's 10 Best Scientific Visualizations of 2013
- 2013 "Darwin's Extra Sense" 39 minute documentary on how 21st century mathematics is enhancing the study of the life sciences includes a 6 minute section on food webs featuring our visualizations and interviews with Martinez, Jen Dunne and Bob May.
- 2012 Over 45 different news organizations (e.g., NY Times, LA Times, Washington Post, Time, The Economist, CNN, BBC, NPR, Bill Moyers, etc.) covered our Barnosky et al. 2012 *Nature* review article on state shifts in Earth's biosphere. Major news coverage was often accompanied by opinion articles emphasizing the importance of our findings. N.D. Martinez was quoted in a Daily Californian article on the review.
- 2011 TED video of lab member Eric Below titled "How Complexity Leads to Simplicity" featuring PEaCE lab research viewed over 780,000 times since posted November 2010.
- 2011 Quoted in commentary on "Rescuing ecosystems from extinction cascades through compensatory perturbations" (*Nature Communications*) in NatureNews & Science News.
- 2008 The Cambrian Smorgasbord *Nature* (covered by many outlets)
- 2008 Fossils Help Figure Out Food Webs Old and New *Science* (covered by many outlets)
- 2006 Restoring Nature's Backbone. *PLoS Biology*.

- 2004 When Things Get Complicated. *Boston Globe*.
 2004 The Mathematics of Networks. Math Awareness Month poster—FoodWeb3D image.
 2003 Virtual Ecosystems. *Conservation in Practice* (cover feature article).
 2002 Untangled Food Webs. *California Wild Magazine* (California Academy of Sciences).
 2002 Nature's Hidden Links. *Focus Magazine*.
 2002 Most Species More Closely Linked Than Previously Known. *PlanetSave Networks*.
 2002 Tiburon Study Probes Ecosystems: Romberg Center Research Shows Web of Dependence. *Marin Independent Journal*.
 2002 Life's Not So Complicated Web. *BBC Science News*.
 2001 The Weakest Link. *New Scientist* 2304.

CO-AUTHORED AND SOLE-AUTHORED GRANTS AND PROPOSALS.

- 1987 **A Critical Re-examination of Food Web Patterns in Real Ecosystems.** Initially received \$47,000 and 6 months funding from the **National Science Foundation** (Grant BSR88-07404). Additional 2 years funding and \$100,000 received for construction and analysis of the Little Rock Lake food web. Proposal conceived of and initiated by Martinez and co-authored by Martinez and Sugihara. PI: George Sugihara.
- 1988 **Toxicity and Transport of Contaminants in Aquatic Ecosystems.** The food-web component of this project was funded by a subproject proposal that was written by Martinez. The primary objectives included analyzing food webs for their potential to bioaccumulate contaminants. A major finding was that food chains are much longer and bioaccumulation potential is much higher than typically appreciated. \$150,000 annual budget and 6 years funding from the **National Institute of Environmental Health Sciences** (PHS Grant P42 ES 0470). Co-Principal Investigators: Susan Anderson and John Harte.
- 1991 **Minority Postdoctoral Travel Award.** \$3000 for travel to the Annual Meeting of the Ecological Society of America in San Antonio, Texas, and travel to the Centre of Population Biology in the U.K. to collaborate with the Centre's Director, J.H. Lawton. PI: Neo Martinez. NSF Grant DIR-9120696.
- 1992 **Food Webs and their Relation to Species Diversity and Abundance.** \$30,000 from 1/92 to 1/93. **Ford Foundation** Fellowship for Minorities administered by the National Academy of Sciences. Supported preliminary analyses of the food webs of Mirror Lake, New Hampshire and the East River in Colorado. This research aims to evaluate the binary food web structure of these systems and to examine how the diversity and abundance of species is distributed among trophic niches defined by the food web.
- 1992 **Food Webs and their Relation to Species Diversity and Abundance.** \$105,000 Postdoctoral Research Fellowship awarded for continuation of Ford funded work described above. NSF Grant BIR-9207426 from 1/93 to 1/96. PI: Neo Martinez.
- 1992 **Lake Food Webs: Properties and Artifacts.** \$177,666. The research plan is similar to that for Little Rock Lake with the addition of constructing food webs including only biomass dominants and comparing such webs with more diverse versions that include many more rare species. The project was funded \$177,666 for construction and analysis of four food webs from Lake Tahoe, Castle Lake, and Clear Lake in California and Mirror Lake in New Hampshire NSF Grant DEB-92-8122. Proposal conceived of and initiated by Martinez. PI: Charles Goldman

- 1994 **Biomolecular Analyses of Microscopic Trophic Interactions.** This \$45,000 Small Grant for Exploratory Research was granted for developing quantitative polymerase chain reaction (QPCR) based techniques to estimate population sizes of *E. coli* strains in the gut of a micrometazoan bacterivorous nematode, *C. elegans*. NSF Grant DEB-9421427 (10/1/94-9/30/95) Co-PI's: Neo Martinez and Mike Banks.
- 1997 Faculty Affirmative Action Award. \$6500. SFSU, San Francisco, CA
- 1997 Faculty Creative Activity Award, 1 Mo. Summer Salary. SFSU, San Francisco, CA
- 1999 **Instructional Environmental Science Computer Lab.** \$60,000 from NSF with \$72,630 match from SFSU. Total: \$132,630. 2-year NSF Course, Curriculum, and Laboratory Improvement Grant DUE-9950461 (6-15-99 to 5-31-01) PI: Martinez. Co-PI's Foschi and Garfield.
- 1999 **Null and Natural Food Webs: A Critical Investigation of Biological and Methodological Explanations for Food-web Structure.** 1-year \$35,000 Starter Research Grant. NSF Grant DEB-9905446 (5-1-99 to 4-30-00) PI: Martinez. Funded at \$35k.
- 2000 **Effects of biodiversity loss on complex communities: A web-based combinatorial approach.** 2-year NSF Bioinformatics Postdoctoral Research Grant for Jennifer Dunne based in Martinez' lab. Includes part-time residence at the Santa Fe Institute and collaboration with Shahid Naeem at the University of Washington. Proposal co-authored by: Dunne, Martinez, and Rich Williams. (DEB/DBI 0074521. 11-1-00 to 10-31-02) PI: Jennifer Dunne. Funded at \$100k.
- 2000 **Scaling of Network Complexity with Diversity in Food Webs.** 3-year NSF Biocomplexity Incubation Grant Number DEB-0083929 (9-15-00 to 8-31-03). PI: Martinez. Co-PI: Laszlo Barabasi. Funded at \$100k.
- 2001 **Trophic and Community Dynamics in the Sierra Nevada Ecosystem.** The Trophic Dynamics Prospectus and the Community Dynamics Prospectus for the Sierra Nevada Monitoring Team. The prospectuses are part of the Ecosystem Process Conceptual Model that was developed for the Sierra Nevada Adaptive Management strategy. \$8k funded by the Sierra Nevada Monitoring Team of the US Forest Service. PI: Martinez. Co-PI: Eric L. Berlow
- 2001 **Webs on the Web: Internet Database, Analysis, and Visualization of Ecological Networks.** Supported by the Packard Foundation (\$3k) and Intel (\$8k) via the Santa Fe Institute's "Robustness" and "Network Dynamics" programs, respectively. Santa Fe Institute workshop was funded that brought experts in ecological, physical, metabolic, and social networks to plan a full project recently funded by NSF. PI: Martinez. Co-PI's Dunne and Williams.
- 2002 **Ecology and Economy of Coupled Natural-human Networks in Marine Ecosystems.** 4-year NSF proposal for the Biocomplexity Coupled Natural Human Systems program. \$2M requested from NSF. \$112k match offered by SFSU. PI: Martinez. Co-PI's: Eric L. Berlow (University of California at Berkeley), Bruce A. Menge (Oregon State University), Fiorenza Micheli (Stanford University), Richard B. Norgaard (University of California at Berkeley), Rashid Sumaila (University of British Columbia, Vancouver), Richard J. Williams (San Francisco State University). NSF Panel recommended funding this proposal as one of the top 12 of 58 proposals reviewed. However, insufficient funds were available and project was not funded.

- 2002 Webs on the Web: Internet Database, Analysis and Visualization of Ecological Networks.** 3-year NSF Biological Databases and Informatics program grant for \$1,443,829 from NSF and \$113,845 from SF State U. for a total of \$1,557,674 (1-15-03 to 1-14-06). This project establishes an Internet database of food webs, which describe the trophic structure and function of ecological networks, combined with analytical tools that will increase the ability of scientists and students to exchange and analyze information about ecological networks. PI: Martinez, Co-PI's: Jennifer Dunne (Santa Fe Institute, RMBL), Matt Jones (NCEAS), Rich Williams (Microsoft) and Ilmi Yoon (SF State U.).
- 2003 Science on the Semantic Web: Prototypes in Bioinformatics.** 5-year NSF grant from the Information Technology Research program. Funded \$2,350k from 9-1-03 to 8-31-08 to develop a framework for conducting science research and education on the semantic web, and will implement and evaluate prototype tools and applications for use in the biocomplexity and biodiversity domains. PI: Tim Finin (U. of MD, Baltimore). Co-PI's: Jim Hendler (University of Maryland at College Park), Neo Martinez (Rocky Mountain Biological Lab), Jim Quinn (University of California at Davis), John Schnase (NASA Goddard Space Flight Center).
- 2005 Teacher Research Experience and Curricular Development for Ecological Networks known as "Food Webs."** 1-year NSF grant provide an educator with research experience on ecological networks and also the support to turn this experience into at least two curricular modules for grades 5 and 8. Funded \$12,500 from 9-1-03 to 8-31-08. PI: Neo Martinez.
- 2008 Semantic Web Informatics for Species in Space and Time (SWISST).** Proposal for a 3-year Biological Databases and Informatics (BDI) project that would extend, integrate, and automate access to, and analysis of, ecological data. Reviewed and recommended for funding with PI: Neo Martinez CoPI's: Brian Enquist (University of Arizona), Jennifer Golbeck (University of Maryland), Rich Williams (Microsoft External Research Office), Ilmi Yoon (San Francisco State University). Funded \$1,502,296 from NSF plus ~\$300k match from Microsoft 11-15-09 to 10-30-12 with Jen Dunne and the Santa Fe Institute as lead PI and Institution.
- 2010 Cloud-enabled Exploration of Complex Ecological Networks.** Proposal for a 2-year supplement to our SWISST project submitted to NSF's Computing in the Cloud program. The project ports our informatics research software to the Microsoft Azure cloud computing platform and increases its usability to conduct basic research structure and function of ecological networks as well as more applied research on the effects of species loss and invasion on ecosystems. \$149,000 plus computing resources from Microsoft awarded in 2010.
- 2010 Building the Next Generation of Ecological Network Theory in the Cloud.** Proposal for a 2-year EARly concept Grant for Exploratory Research (EAGER) grant submitted to NSF's Computing in the Cloud program. The project ports our informatics research software to the Microsoft Azure cloud computing platform to seize upon a transformative scientific opportunity presented by cloud computing to initiate the 3rd generation of ecological network theory and continue the lineage's history of profound and wide applications. It will formulate a new multi-dimensional model of trophic niche space to complement and remedy problems in the earlier theory largely based on single dimensional niches. \$300,000 plus computing resources from Microsoft is requested. Proposal currently under revision for future submission to NSF.

2011 CDI-Type II: Complexity, Optimization and Thresholds in Human-Natural Networks

Proposal for a 4-year project for NSF's Cyber-enabled Discovery and Innovation program. This project would transform research on complex systems by creating and synthesizing transformative advances in computing and information sciences that will enable new more powerful, realistic, and wide-ranging analysis and subsequent understanding of human-natural systems. Interdisciplinary synthetic models of the structure and nonlinear dynamics of human-natural networks and novel computational methods will allow previously intractable problems in ecology and economics to be studied effectively. \$2,089,924 was requested. Martinez is Lead PI. Co-PIs: Carla Gomes and Bart Selman of Cornell, Rich Williams of Microsoft Research, and Rashid Sumaila of U. of Brit. Columbia's Fisheries Research Centre. Was among the top 30% of proposals rated as "Competitive" but not among the 10-15% that were funded. Quotes from the Panel Summary: "The panel thought that this proposal was very ambitious, and well-aligned with CDI goals. Overall, the panel appreciated the boldness of the proposal, but was concerned whether the range of realms proposed can all be modeled and combined with adequate accuracy."

2012 CNH: Socio-Ecosystem Dynamics of Natural-Human Networks on Model Islands

4-year project for NSF's Coupled Dynamics of Natural and Humans Systems (CNH) program to improve understanding of coupled natural-human systems and push forward the frontiers of natural and social sciences, integrating them through a focus on model systems, specifically the human ecodynamics of well-studied islands before and after human occupation. This research will develop and test conceptual and quantitative theory that emphasizes feedbacks between humans and the ecological systems supporting humans. Our project uses cutting edge archaeological and paleo-ecological understanding and data to determine the role of critical state variables in setting the initial conditions and subsequent developmental trajectories of four island socio-ecosystems and then computationally modeling and testing theories of long-term human-ecology feedbacks in food webs. Martinez is Lead PI. Co-PIs: Patrick Kirch and Neil Davies of UC Berkeley, Jennifer Dunne of the Santa Fe Institute and Jennifer Kahn of the Bishop Museum in Hawaii. **CNH recommended funding at \$1,425,000.** NSF Division of Grants and Agreements declined to fund citing insufficient assets of the lead institution. We revised and resubmitted the proposal with the Jen Dunne and the Santa Fe Institute as lead PI and Institution. NSF has now **awarded us \$1.3M** for this project .

2012 Dimensions: Collaborative Research: A community level approach to understanding speciation in Hawaiian lineages.

4-year Project for NSF's Dimensions of Biodiversity Program. The project aims to transform understanding of the impact of the dynamic community on biodiversity by integrating these two approaches, including (1) evolutionary models, which generally examine lineages through time, and (2) macro-ecological theory, which has mainly addressed landscapes that are static over evolutionary time. The synergy between the two approaches is made possible here through the use of a habitat chronosequence, and corresponding space-for-time substitution, provided by the dynamic geomorphology of the young islands of the Hawaiian archipelago. Rosie Gillespie is lead PI of UC Berkeley group including Co-PIs John Harte, Rasmus Nielsen, & Patrick O'Grady (\$1,061,370 requested). **Martinez is lead PI of the PEaCE lab group (\$148,056 requested)** D.S.

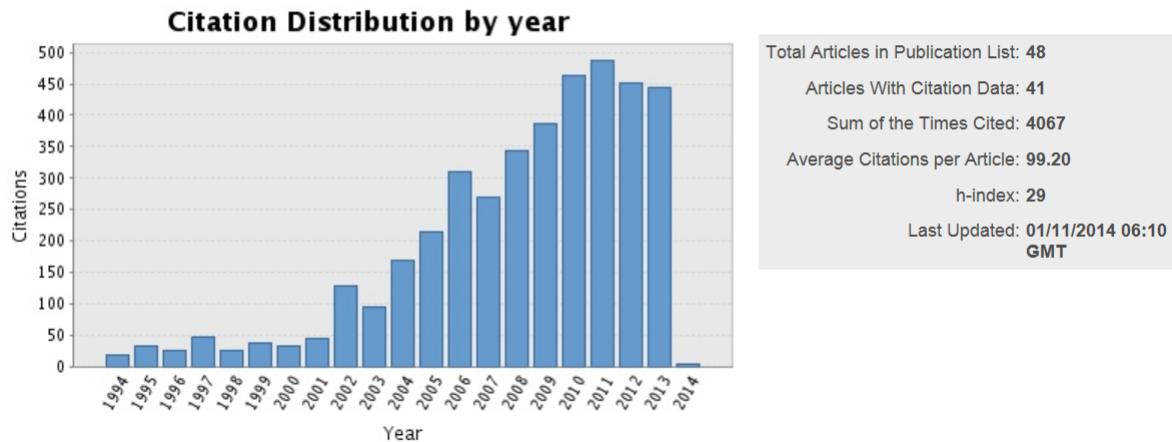
Gruner is lead PI of the U of MD group (\$258,622 requested). K.L. Shaw is lead PI of the Cornell U. Group. (\$214,240 requested). D.K. Price is lead PI of the U. of HI group (\$316,582 requested). Total of \$1,998,870 requested. **NSF recommended funding at \$1,970,814.** Pre-award activities led to Martinez being changed from a lead-PI to a UC Berkeley subcontractor.

PUBLICATIONS: (Asterisks denote my postdoctoral* and graduate student** authors. 48 of the 73 publications are in peer-reviewed journals e.g., 3 in *Nature*, 2 in *Science*, 4 in *PNAS*)

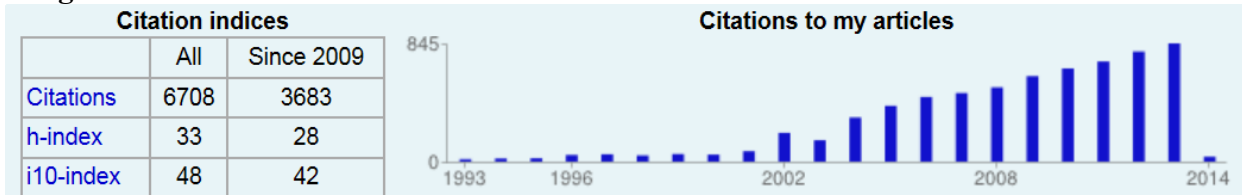
My Publications: Citation Metrics

This graph shows the number of times the articles on the publication list have been cited in each of the last 20 years.

Note: Only articles from Web of Science with citation data are included in the calculations. [More information about these data.](#)



Google Scholar Citation Metrics:



1. **Martinez, N.D.** 1990. New wave ecology. (Symposium review) *Bulletin of the Ecological Society of America* 71:130-132.
2. **Martinez, N.D.** 1991. Artifacts or Attributes? Effects of Resolution on the Little Rock Lake food web. *Ecological Monographs* 61:367-392.
3. **Martinez, N.D.** 1991. Effects of Scale on Food Web Structure. Dissertation. University of California-Berkeley.
4. **Martinez, N.D.** 1992. Constant connectance in community food webs. *American Naturalist* 139:1208-1218.
5. Cohen, J.E., R.A. Beaver, S.H. Cousins, D.L. DeAngelis, L. Goldwasser, K.L. Heong, R.D. Holt, A.J. Kohn, J.H. Lawton, **N.D. Martinez**, R. O'Malley, L.M. Page, B.C. Patten, S.L. Pimm, G.A. Polis, M. Rejmánek, T.W. Schoener, K. Schoenly, W.G. Sprules, J.M. Teal, R.E. Ulanowicz, P.H. Warren, H.M. Wilbur, P. Yodzis. 1993. Improving Food Webs. *Ecology* 74:252-258. (Martinez made significant written contributions and contributed a qualitative classification system for the trophic interaction data. Martinez was 1 of 3 authors whose work was described as improving food webs in the manner suggested).
6. **Martinez, N.D.** 1993a. Effect of scale on food web structure. *Science* 260:242-243. also see retraction of editorial error: *Science* 260:1412.
7. **Martinez, N.D.** 1993b. Effects of resolution on food web structure *Oikos* 66:403-412.

8. **Martinez, N.D.** 1994. Scale-dependent constraints on food-web structure. *American Naturalist* 144:935-53.
9. **Martinez, N.D.** 1995. Unifying Ecological Subdisciplines with Ecosystem Food Webs. pp 166-175 in *Linking Species and Ecosystems* (1993 Cary Conference Proceedings). C. G. Jones and J. H. Lawton, eds. Chapman and Hall.
10. **Martinez, N.D.** & J.H. Lawton. 1995. Scale and food-web structure--from local to global. *Oikos* 73:148-154.
11. Bengtsson, J. & **N.D. Martinez.** 1996. Cause and effect in food webs: Do generalities exist? pages 179-184 in *Food Webs: Integration of Patterns and Dynamics* eds. G.A. Polis and K.O. Winemiller. Chapman and Hall.
12. **Martinez, N.D.** 1996. Defining and measuring functional aspects of biodiversity. Pages 114-148 *In Biodiversity: a biology of numbers and difference.* K. J. Gaston, ed. Blackwell Scientific.
13. Hawkins B.A., **N.D. Martinez** and F. Gilbert. 1997. Source food webs as estimators of community web structure. *International Journal of Ecology* 18:575-586.
14. **Martinez, N.D.**, and J.A. Dunne**. 1998. Time, space, and beyond: Scale issues in food-web research. Pages 207-226 in *Ecological Scale: Theory and Applications* (D. Peterson & V.T. Parker eds.). Columbia Press
15. **Martinez, N.D.**, B.A. Hawkins, H.A. Dawah, and B. Feifarek**. 1999. Characterization of food-web structure with moderate sampling effort. *Ecology* 80:144-155.
16. Holt, R.D., J.H. Lawton, G.A. Polis, and **N.D. Martinez.** 1999. The effect of trophic rank on the species-area relationship: theory and empirical patterns. *Ecology* 80:1495-1506.
17. Memmott, J., **N.D. Martinez** and J.E. Cohen. 2000. Predators, parasitoids and pathogens: species richness, trophic generality, and body sizes in a natural food web. *Journal of Animal Ecology* 69:1-15.
18. Williams, R.J.* , and **N.D. Martinez.** 2000. Simple rules yield complex food webs. *Nature* 404:180-183 (*Authors contributed equally. Martinez is corresponding author*).
19. Williams, R.J.* , **N.D. Martinez**, E.L. Berlow, J.A. Dunne* and A-L Barabási. 2001. Two degrees of separation in complex food webs. Santa Fe Institute Working Paper 01-07-036 (*Martinez is corresponding author*).
20. Williams, R.J.* and **N.D. Martinez.** 2001. Stabilization of chaotic and non-permanent food web dynamics. Santa Fe Institute Working Paper 01-07-37.
21. Dunne, J.A.* , Williams, R.J.* and **N.D. Martinez.** 2002. Small networks but not small worlds: Unique aspects of food web structure. Santa Fe Institute Working Paper 2002-03-10.
22. Dunne, J.A.* , **N. D. Martinez**, and R.J. Williams*. 2002. Network Topology and Species Loss in Food Webs: Robustness Increases with Connectance. Santa Fe Institute Working Paper 02-03-013.
23. Williams, R.J.* and **N.D. Martinez.** 2002. Trophic Levels in Complex Food Webs: Theory and Data. Santa Fe Institute Working Paper 02-10-056.
24. Dunne, J.A.* , R.J. Williams*, and **N.D. Martinez.** . 2002a. Food-web structure and network theory: the role of connectance and size. *Proceedings of the National Academy of Sciences.* 99:12917-12922.
25. Dunne, J.A.* , R.J. Williams*, and **N.D. Martinez.** . 2002b. Network structure and biodiversity loss in food webs: robustness increases with connectance. *Ecology Letters* 5:558-567.
26. Williams, R.J.* , E.L. Berlow, J.A. Dunne*, A-L Barabási. and **N.D. Martinez,** 2002. Two degrees of separation in complex food webs . *Proceedings of the National Academy of Sciences* 99:12913-12916 (*Martinez is corresponding author*).
27. Brose, U.* , R.J. Williams*, and **N.D. Martinez.** 2003a. Comment on "Foraging adaptation and the relationship between food-web complexity and stability. (Originally accepted titled: The Niche model recovers the negative complexity-stability relationship effect in adaptive food webs.) *Science* 301:918 (918b-918c).
28. Brose, U.* , **N.D. Martinez,** and R.J. Williams*. 2003b. Estimating species richness: Sensitivity to sample coverage and insensitivity to spatial patterns. *Ecology* 84:2364-2377.

29. Dunne, J.A.* , R.J. Williams*, and **N.D. Martinez**. 2003. Network structure and robustness of marine food webs. Santa Fe Institute Working Paper 03-04-024.
30. Brose, U.* , A. Ostling,** K. Harrison**, and **N. D. Martinez**. 2004. Unified spatial scaling of species and their trophic interactions. *Nature* **428**:167-171.
31. Williams, R.J.* , and **N.D. Martinez**. 2004. Stabilization of chaotic and non-permanent food-web dynamics. *European Physics Journal B* **38**:297-303.
32. Dunne, J.A.* , R.J. Williams*, and **N.D. Martinez**. 2004. Network structure and robustness of marine food webs. *Marine Ecology Progress Series* **273**:291-302.
33. Brose, U.* , and **N.D. Martinez**. 2004. Estimating the richness of species with variable mobility. *Oikos* **105**:292-300.
34. Williams, R.J.* , and **N.D. Martinez**. 2004. Limits to trophic levels and omnivory in complex food webs: theory and data. *American Naturalist* **163**:458-468.
35. **Martinez, N.D.** and J.A. Dunne*. 2004. Virtual Ecosystems – Response to letter to the Editor from Robert Paine. *Conservation in Practice* **5** (1):40-41.
36. Williams, R.J., and **N.D. Martinez**. 2004. Diversity, complexity, and persistence in large model ecosystems. Santa Fe Institute Working Paper 04-07-022.
37. Dunne, J.A.* , U. Brose,* R.J. Williams, and **N.D. Martinez**. 2004. Modeling food-web structure and dynamics: implications for complexity-stability. Santa Fe Institute Working Paper 04-07-021.
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 51. **Martinez, N.D.**, R.J. Williams, and J.A. Dunne. 2006. Diversity, complexity, and persistence in large model ecosystems. Pages 163-185 in Ecological Networks: Linking Structure to Dynamics in Food Webs. M. Pascual and J.A. Dunne, eds. Oxford University Press. (previously, Santa Fe Working Paper 04-07-022)
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- Networks. pp 342-350 in *Unifying Themes in Complex Systems*. A. A. Minai, D. Braha, & Y. Bar-Yam, eds. Springer.
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 68. Boit, A., **N.D. Martinez**, R.J. Williams and U. Gaedke. 2012. Mechanistic theory and modeling of complex food-web dynamics in Lake Constance. *Ecology Letters* 15:564-602.
 69. **Martinez, N.D.**, P. Tonin, B. Bauer, S. Yoon, I. Yoon, J.A. Dunne. 2012. Sustaining economic exploitation of complex ecosystems in computational models of coupled human-natural networks. *AAAI 2012*. Proceedings of *The Association for the Advancement of Artificial Intelligence*, (Special Track on Computational Sustainability).
 70. Thompson, R.M., U. Brose, J.A. Dunne, R.O. Hall, S. Hladyz, R.L. Kitching, **N.D. Martinez**, H. Rantala, T. Romanuk, D.B. Stouffer and J.M. Tylianakis. 2012. Food webs: reconciling the structure and function of biodiversity *Trends in Ecology and Evolution* 27:689-697.
 71. Dunne, J.A., K. D. Lafferty, C. D. Zander, A. P. Dobson, R. F. Hechinger, A. M. Kuris, **N. D. Martinez**, J. P. McLaughlin, K. N. Mouritsen, R. Poulin, K. Reise, D.B. Stouffer, D. W. Thieltges, R. J. Williams. 2013. Effects of Parasites on the Network Structure of Food Webs. *PLoS Biology* 11(6): e1001579.
 72. Yoon, I., G. Ng, H. Rodrigues, T. Nguyen, J. H.Paik, S. Yoon, R. J. Williams, and **N. D. Martinez**. 2013. Iterative design and development of the "World of Balance" game. *IEEE Games Innovations Conference* pages 283-290.
 73. Kitzes, J., E.L. Berlow, E. Conlisk, K. Erb, K. Iha, N.D. Martinez, E. Newman, C. Plutzer, A. Smith, and J. Harte. *in review*. Linking biodiversity loss to economic consumption through global wildlife footprint. *PNAS*.

Manuscripts yet to be published:

1. **Martinez, N.D.** and R.J. Williams. *in revision*. Restrained consumption facilitates ecosystem function in complex ecological networks.
2. **Martinez, N.D.** *in revision*. Connecting ecology and economy: Metaphor, mechanism, and the future of network science.
3. Cardon, Z.G., J.A. Draghi,** R.J. Williams and **N.D. Martinez**. *In revision*. Predicting omnivores' trophic levels from structural food webs. *Oikos*.
4. Riede, J.O., S.B. Otto, N.D. Martinez & U. Brose. *in prep*. Loss of large top predators in species-poor food webs yields the highest secondary extinction risk.
5. Romanuk,* T.N., Y. Zhou** and **N.D. Martinez**. *In revision*. Robustness and resilience to invasions in model food webs.
6. Romanuk,* T.N., Y. Zhou** and **N.D. Martinez**. *in prep*.-b Shared history facilitates simulated invasion meltdowns in complex ecological networks.
7. **Martinez, N.D.** P. Tonin and B. Bauer. *in prep*. Ecosystem services and the dynamics of economically exploited ecological networks.

8. Valdovinos, F.S., B.J. Brosi, H.M. Briggs, K.W. Niezgod, P. M de Espanés, R. Ramos-Jiliberto, **N. D. Martinez**. Adaptive Foraging Stabilizes Pollination Networks via Apparent Altruism
9. Valdovinos, F.S., P. M de Espanés, R. Ramos-Jiliberto, Diego P. Vázquez, **N. D. Martinez**. Resistance and resilience of pollination networks to simulated invasion depend on adaptive foraging, network structures, and the invaders' traits.
10. Morlon, H., S. Kefi, and **N. D. Martinez**. Using trophic similarity to understand community composition

MENTORING (Underrepresented minority students*, 6 current mentees^C):

Postdoctoral Students

Ana M. Martín González^C. Ph.D. 2010 from the Universitat Autònoma de Barcelona.

Awarded a National 3-year Postdoctoral Research fellowship in 2011 from Spain's Federación Española para la Ciencia y la Tecnología (FECyT) to study of ecological interactions among species, especially in plant-pollinator networks.

Rosalyn Rael*^C. Ph.D. 2009 in Applied Math from University of Arizona at Tucson.

Awarded a 1 year Ford Foundation Postdoctoral Research fellowship to work with me on evolution of and within complex ecological networks that began July 2011.

Tamara Romanuk. Ph.D. 2002. Hamilton University. Canadian NSERC Postdoctoral Fellow. Effects of diversity, complexity, and interaction strength on the stability of populations embedded in food web networks. January 2004-January 2006. Currently Associate Professor of Marine Biology, Dalhousie University, Halifax, Nova Scotia.

Ulrich Brose. Ph. D. 2001. University of Potsdam, Brandenburg, Germany. October 2001-February 2004. Computational Analysis of Estimation Algorithms for Measuring Species Diversity. Postdoctoral Fellowship from the Leopoldina Promotional Program of the Ministry of Education and Research of the German Federal Government. Currently Tenured professor and Head of the Ecological Networks Lab and section for Systemic Conservation Biology, University of Göttingen, Germany.

Jennifer Dunne. Ph.D. 2000 Energy and Resources, UC Berkeley. NSF Bioinformatics postdoctoral fellow (2000-2002) Project: Effects of Biodiversity Loss on Complex Communities: A Web-Based Combinatorial Approach. Currently Santa Fe Institute Professor and Co-Director of the Pacific Ecoinformatics and Computational Ecology Lab.

Richard J. Williams. Ph.D. 1991 Physical Oceanography from Scripps Institution of Oceanography, Univ. of California, San Diego. Complex Systems Summer School 1997, Santa Fe Institute. Postdoc based in my lab 1997-2000. After leading his Computational Ecology and Environmental Science group at Microsoft External Research Office, Cambridge, UK, Rich is now working for Quid, a San Francisco startup building data visualization and analysis software.

Graduate students

Kea Skeate^C (University of Arizona Ecology and Evolutionary Biology Ph.D. Student)

Ida Sognæs^C (University of California at Berkeley Energy and Resources Ph.D. Student)

Jess Goddard^C (University of California, Berkeley Energy and Resources Ph.D. Student)

Fernanda Valdovinos^{C*} (University of Chile Ph.D. expected 2013)

Hélène Lassaux (Ecole Polytechnique, Paris Applied Mathematics Masters exp'd 2013)

Barbara Bauer. Potsdam University Ph.D. 2012. Now Postdoctoral Research at

GEOMAR, the Helmholtz Centre for Ocean Research Kiel, Germany

Perine Tonin (Ecole Polytechnique, Paris. Applied Mathematics Masters expected 2012)
 Coralie Picoche (Institut National des Sciences Appliquées de Lyon. Masters of
 BioInformatics and Modeling awarded 2012)

Alice Boit (Potsdam U./Microsoft Fellow Ph.D. 2012 now Postdoctoral Researcher at
 Potsdam Institute for Climate Impact Research (PIK))

Rosalyn Rael* (Currently Postdoctoral Researcher at PEaCE lab)

Yun Zhou (UC Berkeley Ph.D. Degree granted 2006, now Harvard International Security
 Research Fellow)

Ulises Ricoy* (U. of Texas Ph.D. in Neurobiology Degree granted 2007.

Currently Assistant Professor of Biology at Northern New Mexico College)

Erin Vaccaro (SFSU MS Degree granted 2003. Currently Faculty at Medocino College and
 Science teacher at Willits Charter School)

Cedric Puleston (SFSU MS Degree granted 2003, Stanford Ecology Ph.D. 2009. Now UC
 Davis

Postdoctoral Researcher.

Brett Harvey (NSF Predoctoral Fellow at UC Davis Ecology Ph.D. 2009. Now Environmental
 Scientist at California Dept. of Water Resources)

Kateri Harrison (SFSU MS Degree granted 2003. Now Consultant and owner of SWALE,
 Sierra

Watershed and Land Enterprise in Grass Valley, CA)

Denise Piechnik (UC Davis Ph.D. in Ecology granted 2007)

Brian Feifarek (UC Berkeley Ph.D. student. Owner of North Fork Software, Boulder, CO)

Undergraduate students

Rigoberto Rodriguez* 2012 (Skyline College, San Bruno, CA)

Geraldine Blay* 2011 (Pacific Ecoinformatics and Computational Ecology Lab)

Ricardo J. Colón* 2005 (Strategies for Ecology Education, Development and
 Sustainability program student of the Ecological Society of America)

Erika Mudrak 2001 (Rocky Mountain Biological Lab NSF REU student)

Danielle Ignace* 2000 (Rocky Mountain Biological Lab NSF REU student)

Lauren Buckley 1999 (Rocky Mountain Biological Lab NSF REU student)

Erica Garcia* 1998 (Rocky Mountain Biological Lab NSF REU student)

SYNERGISTIC ACTIVITIES:

1. Initiated a highly integrative research agenda based on complex ecological networks. Our foundational theory describes how food-web architecture, body sizes, and subtle nonlinearities of feeding behavior allow diversity to beget stable complex ecosystems. This theory appears to be the first and only to successfully model seasonal dynamics of a complex food web and also to predict the quantitative effects of species loss on other species in the field. Current applications include parasites, invasive species, speciation in complex communities, paleoecology, non-trophic interactions, and effects of biodiversity loss, climate warming, and economic exploitation on ecosystem dynamics, function, and services.

2. Active supporter of underrepresented minorities in science. Served as an elected member of the Board of Directors of Society for the Advancement of Chicanos and Native Americans in Science (SACNAS) 2008-2010. Since 1992, consistently presented talks on research, proposal writing, mentor selection, and career advice to minority fellows at the National Academy of Science Ford Fellows Conferences and to attendants at the annual SACNAS conferences.

3. Co-developed and co-taught the graduate course Energy and Resources 298 Ecological Economics with Professor Richard B. Norgaard, who was the President of the International Society for Ecological Economics at the time. The course presented, compared, discussed and integrated the philosophies, approaches, models, activities, and conclusions of ecologists and economists. Several research projects on ecological economics including one of my own were catalyzed by this course.

4. Accept primary responsibility for overturning the paradigm of “scale-invariant” structure of food webs and replacing it with a paradigm of “scale-dependent” food-web structure via a series of papers published in the most cited ecology journals during the 1990’s. Currently integrating these structural aspects of food webs with bioenergetic nonlinear dynamic models of complex ecological networks including nutrient dynamics.

5. Founded and currently direct the Pacific Ecoinformatics and Computational Ecology Lab, Berkeley, California-based non-profit research institute. Our lab's publication and citation rates as of 11/6/13 are described in the figure below followed by a general description. In pursuit of a similar mission, I co-founded the broadly aimed Data-Enabled Life Science Alliance (DELSA).

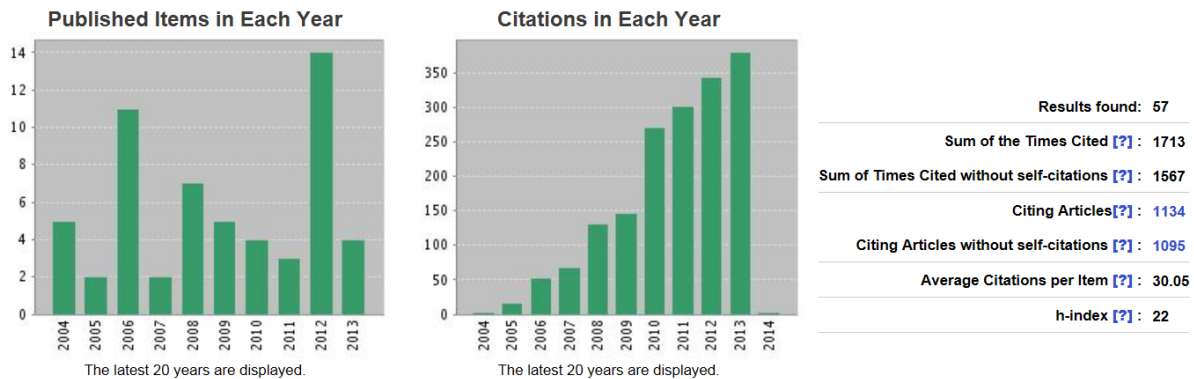
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PACIFIC ECOINFORMATICS & COMPUTATIONAL ECOLOGY LAB

www.foodwebs.org • 1604 McGee Avenue, Berkeley, CA 94703

Mission Statement: The Pacific Ecoinformatics & Computational Ecology Lab is a non-profit research institute that promotes awareness of ecological interdependence through research, development and education related to ecoinformatics and computational ecology. *Ecoinformatics* refers to technologies and practices for gathering, analyzing, visualizing, storing, retrieving and otherwise managing ecological knowledge and information. *Computational Ecology* refers to research focused on quantitative analysis and modeling of ecological systems using computer-based approaches. The Lab primarily conducts research related to the structure, dynamics and function of complex networks of interacting organisms. Lab publications are available at www.foodwebs.org, along with information about people, software, projects and outreach. The Lab was founded in 2004 by Neo Martinez, Jennifer Dunne, and Rich Williams. Prof. Martinez serves as Director, and Prof. Dunne as Co-Director. **Data Sharing:** Prof. Dunne manages the Lab’s data-sharing program, and has provided scores of scientists access to, and advice on, detailed food web data. Analyses of those data have appeared in dozens of papers by non-Lab

scientists in journals that include *Nature*, *Science*, *PNAS*, *Physical Review Letters*, *Ecology Letters*, *The American Naturalist*, *Ecology*, *Journal of Theoretical Biology*, and many others.

OTHER PROFESSIONAL ACTIVITIES:

Reviews of Manuscripts and Proposals for *Nature*, *Science*, *Ecological Monographs*, *American Naturalist*, *Ecology*, *Oikos*, *Ecology Letters*, *PLoS Biology*, *Proceedings of the National Academy of Science*, *Proceedings of the Royal Society of London*, *Paleobiology*, *Journal of Animal Ecology*, *Journal of Theoretical Biology*, various books, the National Science Foundation, and the Natural Science and Engineering Council of Canada.

Extensive service on NSF panels including those for the Minority Postdoctoral Fellowship, Frontiers in Integrative Biological Research, Biological Databases and Informatics and Advances in Biological Informatics panels.

Marin County Science Fair, Environmental Science Judge, 1999

Evaluation Committee Member for the Sierra Nevada Monitoring Project, U.S. Forest Service, 1999-2002.

Martinez, N. D. "Foodwebs and Ecology." 20 minute "eureka!" radio interview of Neo Martinez by eureka! producer Alan Coukell broadcast twice on New Zealand National Public Radio Dec. 3 and 4, 2000. 40,000 estimated listeners.

Organizer of Ecological, Marine and Atmospheric Sciences symposium at the Annual National SACNAS Conference in Phoenix, AZ September 29, 2001

Sole host and 1 of 3 organizers of the N. California Ford Fellows Gathering Oct. 21, 2001.

Co-host (2003-2006) of a weekly summer radio show called "Nature Notes" broadcast from KBUT, the public radio of Crested Butte, Colorado featuring interviews with scientists discussing ecological research especially relevant to mountain communities.

Co-Organized with Jennifer Dunne an Oral Session of the 2005 Annual Meeting of the Ecological Society of America titled "Emerging Ecoinformatic Tools and Accomplishments for Synthetic Ecological Research Across Scales" in Montreal, Canada. Aug. 10.

Organized and taught the 3-day workshop on "Structure and Dynamics of Ecological Networks" to 5 graduate students, 13 postdoctoral students and 2 faculty at the National Center for Ecological Analysis and Synthesis in Santa Barbara, CA October 8-10, 2007.

Presentations – Scientific Seminars, or Meetings:

*Research seminars by N. D. Martinez unless otherwise noted. Beginning in 2003, talks typically included multiple authors from my lab (see www.foodwebs.org). *student authors*

1988

Center for Limnology, University of Wisconsin, Madison, WI.

1990

Center for Conservation Biology, Stanford University, Palo Alto, CA
Institute of Ecology, University of California, Davis, CA

1991

Institute for Ecosystem Studies, NY Botanical Garden, Millbrook, NY
Department of Entomology, Cornell University, Ithaca, NY
Section of Ecology and Systematics, Cornell University, Ithaca, NY

1992

Centre for Population Biology, Imperial College, Ascot, UK
Energy and Resources Group, University of California, Berkeley, CA

Community Ecology, San Francisco State University, San Francisco, CA
Third Grade Class, Kensington Elementary School

1993

Bodega Marine Laboratory, University of California, Davis.
NY Botanical Garden, Millbrook
International Food Web Conference. Pingree Park, CO
Biodiversity and Conservation Meeting, University of Paris, France

1994

Centre for Population Biology, United Kingdom Imperial College
Department of Entomology, University of Wales, Cardiff
Department of Ecology and Environmental Research, University of Sweden, Uppsala
Rocky Mountain Biological Laboratory Gothic, Colorado
Population Biology Seminar, University of California, Davis
Ecology and Evolution Seminar, University of California, Santa Cruz
Meeting of the Ecological Society of America, Knoxville, Tennessee, USA

1995

3 Presentations. Woods Hole Food Web Structure Workshop, Cornell University, Ithaca NY.
Ford Fellows Conference National Academy of Sciences, Washington DC.
Global Change and Ecosystem Complexity and Functioning, Cedar Creek LTER, MI.
Department of Ecology and Evolutionary Biology, Princeton University, Princeton
Annual Meeting of the Ecological Society of America, Snowbird, Utah, USA

1996

Ford Fellows Conference National Academy of Sciences, Irvine, CA.

1997

Zoology Department Oregon State University, Corvallis OR
Biology Department U. of California, Santa Barbara CA

1998

Department of Ecology and Evolution, University of Chicago
Ford Fellows Conference National Academy of Sciences, Irvine, CA.
National Center for Ecological Analysis and Synthesis, Santa Barbara, CA.
Society for the Advancement of Chicanos and Native Americans in Science (SACNAS)
Annual Conference, Washington, DC.
Minority Biomedical Research Seminar, Cal State Los Angeles.
Piechnik*, D. A., and N. D. Martinez. Annual Meeting of the Western Society of Naturalists,
San Diego, CA.
Piechnik*, D. A. and N. D. Martinez. Annual Meeting of the Ecological Society of America,
Baltimore MD.
Martinez, N. D. and R. J. Williams. Annual Meeting of the Ecological Society of America,
Baltimore MD.

1999

Zoology Department, Oxford University, UK.
Fisheries and Wildlife Departmental Seminar. Texas A&M, College Station TX.
Panel Presentation. Ford Fellows Conference National Academy of Sciences, Washington,
DC.
Piechnik*, D. A., and N. D. Martinez. Annual Meeting of the Ecological Society of
America, Spokane, WA.

Martinez, N. D. and R. J. Williams. Annual Meeting of the Ecological Society of America, Spokane, WA.

2000

Martinez, N. D. and R. J. Williams. Joint meeting of the British Ecological Society and the Ecological Society of America. Orlando, FL.

San Francisco State University Biology Department Seminar in Ecology and Evolutionary Biology.

Seminar within the Summer Seminar Series of the Rocky Mountain Biological Laboratory.

Ecology and Evolution Seminar Series of the University of California at Davis given October 26, 2000.

Keynote address to the Annual Meeting of the Ecological Society of New Zealand given November 20, 2000.

Landcare Research Institute, Christchurch, New Zealand given November 23, 2000.

2001

Santa Fe Institute Colloquium Talk February 12. Santa Fe, New Mexico

University of New Mexico Bio. Dept. seminar February 14. Albuquerque.

Multiple presentations. Biocomplexity Workshop March 21-24, 2001, Duke University Marine Lab, Beaufort, NC.

Martinez, N. D., Richard J. Williams, Erin O'Leary*, Katharine Boyle*, Meredith Evans*, Cedric Puleston*, Elizabeth Proctor*, A. Alex Streczyn* and Amanda Turner*. Invited poster for the Cary Conference IX Understanding Ecosystems: The Role of Quantitative Models in Observation, Synthesis & Prediction. May 1-3, 2001 at the Cary Arboretum in Millbrook, New York.

Seminar given May 23, 2001 at the Institut des Sciences de l'Evolution at Université Montpellier, France.

Zoology Departmental Seminar, May 31, 2001 Oxford University, UK.

Centre for Population Biology June 1, 2001 Seminar, Silwood Park, Imperial College, UK.

Annual Meeting of the Society for the Advancement of Chicanos and Native Americans in Science (SACNAS) in Phoenix, Arizona September 28, 2001.

Smithsonian Paleobiology Departmental Seminar presented Oct 15, 2001.

Neo D. Martinez, Jennifer A. Dunne, Albert-Lazlo Barabasi, Richard J. Williams, and Eric L. Berlow. Poster presented at that the National Science Foundation Biocomplexity PI Meeting Oct 16, 2001 at NSF Headquarters Ballston, Virginia.

2002

Biology Department Seminar at the University of Arizona at Tucson Feb. 11.

University of Arizona at Tucson Undergraduate Conservation Biology Interns meeting.

Risks and Opportunities of Scientifically Informed Biodiversity Policy. Feb 11.

UCLA Department of Organismic Biology, Ecology, and Evolution Seminar March 6

UCLA Minority Access to Research Careers (MARC) Seminar March 7.

International Workshop, Netherlands held April 3-7, 2002.

Multiple presentations at *Distribution, Diversity, and Evolutionary Dynamics* meeting June 13-16 at University of Virginia at Charlottesville:

Multiple Presentations at *Ecological Society of America Annual Meeting* August in Tucson.

UC Berkeley Energy and Resources Colloquium. September 25.

SACNAS (Society for the Advancement of Chicanos and Native Americans in Science) Annual Meeting September 26-29 in Anaheim, CA. Martinez mentored in the "Conversations with Scientists" session.

Annual Ford Fellows Conference (Oct 3-5) in Albuquerque, NM. Martinez presented at a Special Interest Session on Grantsmanship.

Annual NSF Minority Fellows and Mentors Meeting, National Science Foundation, Arlington, VA 22230 October 17-18, 2002.

Science on the Semantic Web: Building the Next Generation of Environmental Information Systems. Rutgers University, October 24-25.

2003

UC Berkeley Ecolunch Feb. 3.

Annual Meeting of the American Society of Limnology and Oceanography. J. A. Dunne (presenter), N.D. Martinez and R.J. Williams. Feb 10.

Advanced Network Seminar. Cornell University February 14.

Jugatae Seminar, Cornell University Department of Entomology. Feb 17.

Biology Departmental Seminar, Santa Clara University, Santa Clara, CA Feb 25.

Annual Meeting of the American Physical Society (Austin, Texas). March 5.

Biology Department Seminar. McGill University, Montreal Canada. March 13. Host: Kevin McCann.

Ellner Lab mtg. Cornell University April 3

"Bill Sear's Talk" Center for Applied Mathematics. Cornell University April 21.

Paleofoodweb Workshop, Santa Fe Institute April 24.

Tropical Biology Departmental Seminars. James Cook University. Townsville, Australia. May 20 and May 27

Key Centre Seminar, Macquarie University, Sydney Australia. May 30.

Rocky Mountain Biological Laboratory, Gothic, Colorado Summer Seminar Series. July 8.

InterACT workshop. Linköping, Sweden. August 14

Midterm Conference on Growing Networks and Graphs in Statistical Physics, Finance, Biology and Social Systems. University of Rome, Rome Italy. September 4.

Conversations with Scientists Participant. Annual Meeting of the Society for the Advancement of Chicanos and Native Americans in Science. Albuquerque. October 2.

Lecture Series in the graduate course "Complex Nonlinear Systems" Theoretical and Applied Mechanics 678. Cornell University. Ithaca, NY October 15, 20, 22, and 27.

Departamento de Ecología Seminar. Pontificia Universidad Católica de Chile. Santiago Chile. November 6.

Plenary Address. Annual meeting of the Biological Society of Chile. Puyehue, Chile. November 12.

European International Food-web Symposium. Giessen Germany. November 15.

2004

Santa Fe Institute Workshop "From Structure to Dynamics in Complex Ecological Networks" organized by Mercedes Pascual and Jennifer Dunne February 19-21 Santa Fe, NM.

Plenary address for the 4th International Conference on Complex Systems. Boston, Massachusetts May 16-21.

Two Lectures June 23-24 on Ecological Complexity for the Santa Fe Institute's Complex Systems Summer School June 7 - July 2. Santa Fe, New Mexico.

Plenary address to the Annual Society for Industrial and Applied Mathematics in Portland Oregon July 11-14.

Scaling Biodiversity conference organized by Geoffrey West, David Storch, Jim Brown and Pablo Marquet in Prague, Czech Republic. October 19-23.

University of Minnesota, Department of Ecology, Evolution, and Behavior Seminar. Twin Cities, MN, Nov. 10.

2005

Conference on "Aspects of Self-Organization in Evolution" at the Mathematical Biosciences Institute of the Ohio State University. Columbus, OH, Nov. 14-18.

Keynote address to New Mexico high school students and teachers participating in the Supercomputing Challenge hosted by Los Alamos National Laboratory. Glorieta, NM, Oct. 24.

British Ecological Society International Symposium on "Body Size and the Organization and Function of Aquatic Ecosystems." U. of Hertfordshire de Havilland. Hertfordshire, UK, Sept. 2-5.

Ecological Society of America Annual Meeting. Montreal, Canada, Aug. 7-12.

Two lectures at the Santa Fe Institute's Complex Systems Summer School. June 15-16.

"Structure and Dynamics of Complex Networks" Workshop, International Centre for Theoretical Physics. Trieste, Italy, May 24-28.

Ecology, Evolution and Conservation Biology Colloquium. University of Nevada. Reno, NV, April 2.

Osaka University. Osaka, Japan, Feb. 11.

Plenary address and conference closing remarks for the National Institute for Basic Biology 50th NIBB Conference on "Mathematical and Computational Approaches to Life Science." Okazaki, Japan, Feb. 8-10.

2006

Poster presentation at 2nd annual Peter Yodzis Colloquia in Fundamental Ecology in Guelph, Canada. May 17

International Conference on Network Science in Bloomington Indiana May 23.

Croatian Ecology Society and the Biology Department of the University of Zagreb, Croatia. June 8

Two lectures at the Santa Fe Institute's Complex Systems Summer School. NM June 15-16.

Conference on Complex Systems University of Oxford, Workshop on Social and Ecological Networks. September 28.

Biological Networks meeting of the International School on Complexity in Erice, Sicily in Italy. October 11.

Special Interest Session of Conference of Ford Fellows at the National Academy of Sciences in Washington, DC. October 20.

Biology Department Seminar, Dalhousie University in Halifax, Canada November 2.

"Masterwork" presentation sponsored by the National Science Foundation at the week long International Conference for High Performance Computing, Networking, Storage and Analysis in Tampa, Florida November 14.

2007

Ecolunch Seminar Series and the National Center for Ecological Analysis and Synthesis in Santa Barbara, California January 18.

Geoscience Application Requirements for Petascale Architectures Workshop at the San Diego Super Computing Center of the University of California at San Diego February 21.
Stanford Medical Informatics Seminar at the Stanford University School of Medicine in Palo Alto, California March 8.

3rd Workshop of the European Union's "European Research Area" funded program titled: "Unifying Networks for Science and Society" in Girona, Spain June 4-5.

Two lectures at the Santa Fe Institute's Complex Systems Summer School. June 13 & 15.
Presentation at a special Satellite Conference of the International Conference on Statistical Physics titled: Complex Networks: from Biology to Information Technology in Cagliari, Italy July 2-6.

Presentation in Symposium titled "The Assembly and Disassembly of Ecological Networks: Restoration and Conservation at Multiple Trophic Levels," at the Annual Ecological Society of America Meeting in San Jose, California August 6-10.

Friday Harbor Laboratory Seminar series in Friday Harbor, WA August 16.

Invited Participant in the "Parasites in Food Webs" workgroup and the National Center for Ecological Analysis and Synthesis in Santa Barbara, CA September 13-16.

Created and taught the 3-day workshop on "Structure and Dynamics of Ecological Networks" to 5 graduate students, 13 postdoctoral students and 2 faculty at the National Center for Ecological Analysis and Synthesis in Santa Barbara, CA October 8-10.

"Exploring Careers in Evolution and Ecology" panel at the Annual meeting of the Society for the Advancement of Chicanos and Native Americans in Science, Kansas City, MO, Oct 13 supported by the National Center for Evolutionary Synthesis and the National Center for Ecological Analysis and Synthesis.

Participant in the "Unifying Biodiversity Theories" workgroup and the National Center for Ecological Analysis and Synthesis in Santa Barbara, CA October 22-24.

Ecology Brown Bag Lunch Seminar at the University of California at Santa Barbara. November 5.

2008

Invited Participant in the "Parasites in Food Webs" workgroup and the National Center for Ecological Analysis and Synthesis in Santa Barbara, CA March 3-8.

Invited Participant. NSF Workshop on Knowledge Management and Visualization Tools in Support of Discovery (NSF Whitepaper in preparation). Arlington VA. March 10-11.

Ecology and Evolutionary Biology Monday Seminar. Univ. of Arizona, Tucson, Mar. 24.

Martin Luther King / Cesar Chavez Scholar Series of the Latino/a Association of Graduate Students in Engineering and Science. University of Arizona, Tucson, March 25.

Curriculum in Ecology Seminar Series. University of North Carolina, Chapel Hill, Apr. 10.

Odum School of Ecology Seminar Series. University of Georgia, Athens, GA. April 22.

National Science Bowl. Chevy Chase, MD. May 3.

3rd Grade Science Class at Ethical Culture Fieldston School. New York City, NY. May 5.

3rd Grade Science Class at Buena Vista Elementary School. San Francisco, CA. May 14.

Northwestern Institute on Complex Systems Complexity Conference. Northwestern University, Chicago, Illinois. May 19.

Two lectures given at the Santa Fe Institute's Complex Systems Summer School. June 9-13.

Lectures given at the Food Web Summer School. Parma, Italy. June 16-20.

Led the “Trophic Structures” (paleofoodwebs) group of the Evolution of Terrestrial Ecosystems Program at the National Museum of Natural History during an interdisciplinary workshop Sept. 12-14.

Leibniz-Institute of Freshwater Ecology and Inland Fisheries Seminar, Berlin, Germany. September 18.

Ecology and Evolutionary Biology Monday Seminar. University of Arizona, Tucson, Sept. 22

Participant in the “Parasites in Food Webs” workgroup and the National Center for Ecological Analysis and Synthesis in Santa Barbara, CA Sep. 29-Oct. 3.

Biology Department Colloquium. Northeastern University, Boston, MA. November 10.

Networks Cluster Seminar. University of Houston. Houston, Texas. November 14.

BCNetWorkshop Talk and Debate participant, Barcelona, Spain. December 11.

2009

Dartmouth University, Mathematics seminar, February 26

Leibniz-Institute of Freshwater Ecology and Inland Fisheries Seminar, Berlin, Germany. March 26.

Invited Participant in the “Parasites in Food Webs” workgroup and the National Center for Ecological Analysis and Synthesis in Santa Barbara, CA April-6-11.

Department of Ecology and Ecological Modeling Seminary, Potsdam University, Germany. April 20.

Complex Systems Seminar, Institute for chemistry and Biology of the Marine Environment, University of Oldenburg. April 22.

Max-Planck Institute for Physics of Complex Systems Seminar, Dresden, Germany. April 27.

Two lectures given at the Santa Fe Institute's Complex Systems Summer School. June 19.

Keynote Speaker, "Advances in Complex Networks: recent developments and applications" symposium. Harnack Haus, Berlin, Germany. September 28.

Invited Participant in the “Parasites in Food Webs” workgroup and the National Center for Ecological Analysis and Synthesis in Santa Barbara, CA October 26-30.

Department of Biology Endowed Seminar, University of Massachusetts, Boston. Dec. 4.

2010

Invited Speaker at the Evolution of Complex Systems Conference at the Indian Institute of Science, Bangalore, India January 13-15.

Several lectures, Santa Fe Institute's Complex Systems School, Chennai India January 18-22.

Invited Integrative Biology Departmental Seminar titled “Robustness of Complex Ecological Networks to Species Loss, Invasion, and Exploitation” at the University of California at Berkeley presented Feb 11.

Invited Participant in the “Parasites in Food Webs” workgroup and the National Center for Ecological Analysis and Synthesis in Santa Barbara, CA February 15-19.

Invited Biology Departmental Seminar titled “Robustness of Complex Ecological Networks to Species Loss, Invasion, and Exploitation” Guelph University in Guelph Canada, presented March 2. This was the one seminar per year chosen by departmental graduate students.

Contributed Talk titled “Eco³: Ecology and Economy of Complex Ecosystems” presented at NetSci2010, the annual International Network Science Conference, Boston, MA May 12.

Invited Participant in the “The Ecophylogeny of Complex Species Interactions” workgroup at the Santa Fe Institute in Santa Fe, New Mexico April 7-9.

Invited talk titled “Numbers: Where they come from and what to do with them to live more sustainably on Earth (Ecologically)” presented in the “The Need to Turn Numbers into Knowledge” session of the National Academies Division on Engineering and Physical Sciences Computer Science and Telecommunications Board meeting on Innovation in Computing and Information Technology for Sustainability and Expanding Science and Engineering with Novel CS/IT Methods May 25.

Invited talk titled “Webs gone wild—or should they?” in the Network Approaches to Understanding Complex Aquatic Ecosystem Dynamics interactive session of the annual meeting of the American Society for Limnology and Oceanography (ASLO) in Santa Fe, New Mexico June 9.

Invited talk titled “Ecology and Economy of Complex Ecosystems” at the 2nd International Conference on Computational Sustainability in Boston, June 29.

Poster titled “Integrating Ecology and Economics with a Metabolic Approach to Ecosystem Management” presented at the Gordon Research Conference on the Metabolic Basis of Ecology in Biddeford Maine July 18-22.

Invited opening keynote lecture for the annual meeting in Rome of the Ecological Society of Italy Sept.30. Invitation could not be accepted due to previous conference commitments.

Invited speaker Biodiversity Theory to Inform Global Change Strategies Workshop. "Food webs and Global Change: A Network Theory of Biodiversity and Ecosystem Function." Berkeley, California Dec. 6-7.

2011

Invited Participant in NSF Workshop on the Role of Information Sciences and Engineering in Sustainability (RISES) co-sponsored by NSF and the Computing Community Consortium Washington, DC February 3-4

Invited Northeastern University Department of Civil and Environmental Engineering seminar titled "Sustaining Ecological Networks and Their Services" Boston, MA February 16.

Invited Cornell University Department of Computer Science Department Artificial Intelligence and Computational Sustainability Seminar titled "Sustaining Ecological Networks and Their Services" Ithaca, NY February 18.

Invited participant at NIH Workshop on Value Added Services for VIVO. University of Indiana March 18-20.

Invited Northeastern University Biology Department seminar titled "Sustaining Ecological Networks and Their Services" Boston, MA April 28.

Invited Participant in NSF Data-Intensive Sciences Workshop, May 16-17, Bethesda, MD.

Invited speaker at NetSci2011: The international School and Conference on Network Science in Budapest Hungary June 6-10. title, "Integrating Natural and Social Science with Human-Natural Networks: Ecology and Economy of Ecosystems."

Invited speaker at EEID 2011: 9th Annual Ecology & Evolution of Infectious Diseases Conference at the University of California at Santa Barbara June 18. title: Increasing ecosystem function by restraining consumption: A critical role for infectious diseases

Invited speaker at the Global Workshop on The future of food webs at Monash University, Melbourne Australia June 27-July 1.

Co-organizer with J.A. Dunne of "Evolutionary Processes in Ecological Networks" session at the Ecological Society of America Annual Meeting. Austin, Texas, August 10.

Invited speaker at "Evolutionary Processes in Ecological Networks" session of the Ecological Society of America Annual Meeting. Title: Phylogenetic tools elucidate effects of

trophic interactions on community assembly. Authors: H. Morlon and N.D. Martinez. Austin, Texas, August 10.

Invited speaker at "Evolutionary Processes in Ecological Networks" session of the Ecological Society of America Annual Meeting. Title: Evolution of and in ecological networks. Authors: N.D. Martinez and R.C. Rael. Austin, Texas, August 10.

Co-author of invited talk titled Exploring eco-evolutionary dynamics in network models in "Evolutionary Processes in Ecological Networks" session of the Ecological Society of America Annual Meeting. Authors: T. Romanuk, Y. Zhou, R. J. Williams, U. Brose, A. Binzer, and N.D. Martinez. Austin, Texas, August 10.

Invited Speaker in the Western Society of Naturalists student committee organized symposium on Interdisciplinary Ecology. Title: "Interdisciplinary Ecology: Using Networks to synthesize and integrate Ecology with Computer Science and Ecosystem Management." Vancouver WA. November 12.

Invited Speaker in the Data-Enabled Life Sciences Alliance (DELSA) Invited speaker for Introduction and Invitation workshop of SC11, the International Conference for High Performance Computing, Networking, Storage and Analysis. Title: "Lessons Learned in Computational Explorations of Complex Ecological Networks." Seattle, November 13.

Invited seminar speaker at the Institute of Philosophy and Sciences of Complexity, University of Chile, Santiago, Chile. Title: "Ecosystem Function, Economics, and Evolution of Ecological Networks." December 1.

2012

Invited speaker in the UC Berkeley Initiative in Global Change Biology seminar series. Talk title: "Macroecology, MaxEnt, and Ecological Networks: Theoretical Tools for Biological Effects of Global Change." Co-Author: Eric Berlow. January 30 in Berkeley, CA.

Invited speaker and panelist at the Data Enabled Life Sciences Alliance (DELSA) workshop titled "Supporting Ecosystem for the Life Science in the Beginning of the 21st Century" May 3-4 Bethesda, MD.

Invited paper presentation titled "Cloud-based Exploration of Complex Ecosystems for Science, Education and Entertainment" at the Microsoft Research Cloud Futures Workshop in Berkeley CA May 7-8. Co-Authors: I. Yoon, S. Yoon, G. Ng, H. Rodrigues, and S. Mahajan.

Two invited talks titled "Maximizing Stability and Function of Complex Ecological Networks" and "Sustaining Economic Exploitation in Human-Natural Networks" at the HE-Heraeus Foundation funded conference on Networks in Ecology and Smart Energy Supply in Bremen, Germany June 18-22.

Invited talk titled "Sustaining Economic Exploitation in Human-Natural Networks" and workshop overview presentation. GlobalWeb II meeting in Barcelona, Spain July 9-12.

Paper titled "Sustaining economic exploitation of complex ecosystems in computational models of coupled human-natural networks" presented as a talk and poster within the Special Track on Computational Sustainability of *AAAI 2012*, the annual meeting of The Assoc. for the Advancement of Artificial Intelligence in Toronto, Canada July 23-26.

Co-author of invited talk titled "Dynamics and Evolution of Complex Food Web Networks" at the Society for Mathematical Biology Annual Meeting and Conference. Authors: R.C. Rael and N.D. Martinez. Knoxville, Tennessee, July 25-28.

Co-author of invited talk titled "The influence of speciation on the evolution of complex food web structure" in the Theoretical Ecology Contributed Oral Session of the Ecological Society of America Annual Meeting. Authors: R.C. Rael and N.D. Martinez. Portland, Oregon, August 6.

Distinguished Speaker for the Complex Systems Seminar Series of Northwestern University's Department of Physics and Astronomy and Northwestern Institute for Complex Organizations (NICO). Talk title: "Sustaining Complex Human-Natural Networks--Approaches, Insights, and Opportunities." September 27. Evanston Illinois.

Co-author of invited talk titled " El forrajeo adaptativo produce altruismo aparente en redes de polinización" (Adaptive Foraging yields Apparent Altruism in Pollination Networks) at the Primera Reunión Conjunta de Botánica, Ecología y Evolución (Combined annual meetings of the Chile's societies of Botany, Ecology, and Evolution). Authors: F. S. Valdovinos and N.D. Martinez. Concepcion, Chile October 6-9.

Participated as a Mentor in the Ecology and Evolution section of "Conversations with Scientists" session of the Society for the Advancements of Hispanics, Chicanos, and Native Americans in Science (SACNAS) Annual Convention in Seattle, WA Oct. 11.

Invited Biology Dept. Seminar at Northern New Mexico College, Espanola, NM Oct. 23.

2013

Discussant Leader, Workshop on Frontiers of Macroecological Theory, UC Berkeley Feb 2.

Working Group Participant on "Gradient-based ecological network research: next generation data, models, and theory" at the Santa Fe Institute, Santa Fe, NM March 5-7.

Case Studies in Applied Mathematics Seminar Presentation on "Complex Ecological Network Dynamics" at the University of Arizona Math Department, Tucson March 20.

Biology Colloquium presentation on "Understanding and Sustaining Complex Ecological Networks" Cal State University, Northridge CA. March 22.

Analysis, Dynamics and Applications Seminar Series presentation on "Sustaining Ecological Networks" at the University of Arizona Math Department, Tucson April 2.

Participated as a Mentor in the Ecology and Evolution section of "Conversations with Scientists" session of the Society for the Advancements of Hispanics, Chicanos, and Native Americans in Science (SACNAS) Annual Convention in San Antonio, TX Oct. 3.

Invited talk on "From Genes to Ecosystems: Towards Spatially Explicit Individual-based Network Models of Ecosystems" at the Structure and Dynamics of Meta-Food Webs conference at the Center for Interdisciplinary Research (ZiF) of Bielefeld University Germany Sept 16-18.

Invited talk on "Adaptive foragers in pollination networks: Stability, invasions and apparent altruism" presented by F. S. Valdovinos with co-authors R. Ramos-Jiliberto, P. M. de Espanés and N. D. Martinez at the Structure and Dynamics of Meta-Food Webs conference at the Center for Interdisciplinary Research (ZiF) of Bielefeld University Germany Sept 16-18.

Invited talk on "Food webs: Stability, Sustainability and Tipping points in complex Human-Natural Networks" at the Food webs: Science for Impact Symposium in Marburg Germany Nov. 13-15. This is the 4th Once-a-decade international food web meeting.

Invited talk on "Adaptive Foraging Stabilizes Pollination Networks vis Apparent Altruism" presented by F. S. Valdovinos with co-authors B. J. Brosi, H. M. Briggs, K. W. Niezgodá, and N. D. Martinez at the Food webs: Science for Impact Symposium in

Marburg Germany Nov. 13-15. This is the 4th Once-a-decade international food web meeting.

Invited talk on "From food webs to complex human-natural networks" for the Moorea Island Digital Ecosystem Avatars workshop. ETH Zurich, Switzerland. Nov 19.

2014

Invited Key Note presenter to the 6th topical interdisciplinary symposium titled "How Networks Shape Our World" of the Institutes for Desert Environment and Energy Research (SIDEER), part of the Blaustein Institutes for Desert Research (BIDR), Ben Gurion University of the Negev, Israel March 12-14.