

CURRICULUM VITAE: SHAHID NAEEM

April 2004

Department of Ecology, Evolution, and Environmental Biology (E3B)
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EDUCATION

9/84 - 8/88 Ph. D. University of California, Berkeley (Zoology)
9/81 - 6/84 MA - University of California, Berkeley (Zoology)
9/76 - 6/79 B.A. - University of California, Berkeley (Biology)
2/75 - 9/76 City College of San Francisco
9/72 - 6/74 City University of New York, C.C.N.Y.

EMPLOYMENT

8/2003 – present Professor of Ecology, Department of Ecology, Evolution, and Environmental Biology, Columbia University in the City of New York, NY, USA
9/98 – 6/2003 Professor, Dept. of Zoology, University of Washington, Seattle, WA, USA
(Tenure received in 2000, Promotion 2003)
1/94 – 6/98 Associate Professor, Dept. of Ecology, Evolution and Behavior, University of Minnesota, St. Paul, MN, USA (Tenure received in 1998)
2/92 - 2/94 Postdoctoral Fellow, Centre for Population Biology, Silwood Park, Imperial College, Ascot, Berkshire, England.
8/89 - 2/92 Fellow (Assistant Professor), Michigan Society of Fellows, University of Michigan, Ann Arbor.
1/91 - 5/91 Postdoctoral Fellow, Marine Biological Laboratory, Helsingør, University of Copenhagen, Denmark (overlapped with U. Mich.).
6/89 - 8/89 Instructor, Zoo-10 Introductory Zoology (for non majors), University of California, Berkeley.
1/89 - 6/89 Instructor, Invertebrate Zoology, University of California, Berkeley.

ACADEMIC AWARDS

Elected, Member at Large, Ecological Society of America. 2003.
Fellow of the American Association for the Advancement of Science. 2001
Aldo Leopold Leadership Fellow. 2001
Mercer Award, best ecological paper by younger ecologist, Ecol. Soc. of America, 1995.
McKnight Land-Grant Professor, Univ. of Minnesota, Minneapolis/St. Paul, 1995-1997.
Michigan Society of Fellows Postdoctoral Fellowship, University of Michigan, Ann Arbor, 1989 - 1991.

Smithsonian Tropical Research Institute Fellowship, Barro Colorado Island, Panama, 1989 - 1990. (Declined.)

NATO Postdoctoral Fellowship, Denmark, 1991.

Murray F. Buell Award for best Graduate Student Paper at Ecological Society of America Meetings, August 1988.

Murray F. Buell Award (1 of 2 Hon. Mentions) for best Graduate Student Paper at Ecological Society of America Meetings.

Driscoll Fellowship, University of Minnesota, Summer 1987.

Noyes Tropical Research Fellowship 1985/1986.

U. C. Regents Fellowship for 1985/1986.

Teaching Assistant Award, U. C. Berkeley, 1984.

Graduated U.C. Berkeley, Biology with Honors 1978.

MEMBERSHIP

American Association for the Advancement of Science

American Institute of Biological Sciences

American Society for Microbiology

American Society of Naturalists

British Ecological Society

Ecological Society of America

Society for Conservation Biology

Society for the Study of Evolution

Sigma Xi

SERVICE / OUTREACH

Search Committee Chair (2003/2004), junior faculty position, E3B, Columbia.

National Science Foundation Panels

Ecology Panel (2003)

Dissertation Improvement Panel (2000)

DIVERSITAS, Co-director Core Project 2, 2002-2003.

Organization of Tropical Studies, Zoology Department Representative (2000-current).

Zoology Graduate Program Coordinator (2001-2003), Dept. of Zoology, U. Washington.

Ecological Society of America, Publications Committee, member (1999 – current)

Ecological Society of America, Mercer Awards Committee, member (2002)

American Society of Naturalists, Young Investigator Award, (2002)

Zoology Seminar Committee (1998-2000), Dept. of Zoology, U. Washington.

American Society of Naturalists, Young Investigator Award, 1998

EEB Seminar Committee (1994/1995, 1995-1996)

EEB Advisory Committee (1995/1996)

EEB Forward Steering Committee (1997/1998)

EEB Greenhouse Committee (1994-1998)

EEB Lindeman Lecture Committee (1997/1998)

EEB Art Committee (1994-1998)

Ecology Graduate Admissions Committee (1995/1996, 1996/1997)

Plant Biological Science Admissions Committee (1997/1998)
Ecological Society of America, Buell Award judge, 1995-1998

Reviewer for:

Ecology

The American Naturalist

Journal of Animal Ecology

Functional Ecology

Journal of Ecology

Oecologia

BioScience

Biotropica

J. Tropical Biology

Ecological Entomology

P.N.A.S.

Science

Nature

Ecological Economics

Oikos

Grant reviewer for:

National Science Foundation

National Environmental Resources Council (U.K.)

U.S.D.A., NRIGP

Jeffress Memorial Trust

Environmental Protection Agency

Receiving Editor for:

Ecology Letters

Public Lectures:

19 March 2002. The significance of biodiversity. Lake Forest Lion's Club. Lake Forest, WA.

TEACHING/EDUCATION

Courses taught:

Zoology 220. Animal Diversity. (undergraduate), U. Washington, Seattle.

Biology 472. Foundations of Ecology. (undergraduate), U. Washington, Seattle.

Biology 1201. Ecological and Evolutionary Perspectives. (undergraduate), U. Minn.

Biology 5950. Contemporary Issues in Ecology. (graduate seminar), U. Minn.

Biology 5950. Understanding Nature through Observation and Experiment.

(graduate/undergraduate), U. Minn.

Zoology for Non Majors. University of California, Berkeley

Invertebrate Zoology. University of California, Berkeley

Introductory Biology. University of Michigan, Ann Arbor

Guest Lectures:

Survey of Faculty Research. (Biology 491, Univ. Washington). 13 April 2000.

Ecology and Evolution (Biol 5044), J. Curtsinger, 1996

Ecosystems, E. Gorham, 1998

Biology Colloquium, 1997

Biology Colloquium, 1998

Ecology and Evolution (EEB 3008), R. Shaw and M. Davis, 1998

Laboratory Development:

Ecology and Evolution (EEB 3008), R. Shaw and M. Davis, 1998, HSS laboratory exercise.

Teaching assistant:

My teaching assistantships as a graduate student included cell biology, biology, ecology, general zoology, community ecology, non-majors biology and humans in the tropics.

Mentoring:

2000 Huckabay Foundation Teaching Fellowship to Amanda Graham for course entitled: *Critical perspectives on environmental discourse: integrating communication and ecological views*. With John Stewart (Speech Communication).

1997 NSF Young Scholars Program: High School Summer Science Research Program.

1996 President's Distinguished Faculty Mentor Program.

1996 Life Sciences Summer Research Program.

1996 NSF Young Scholars Program: High School Summer Science Research Program.

1995 University of Minnesota Alumni Association, College of Biological Sciences Mentor Program.

1995 NSF Young Scholars Program: High School Summer Science Research Program.

1995 President's Distinguished Faculty Mentor Program.

Training/Workshops:

2002 Focus Group on Undergraduate Biology Education, Friday Harbor Laboratories, WA

1995/1996 Bush Faculty Development Program for Excellence and Diversity in Teaching

1995 Group and Cooperative Learning, Professional Development Opportunity.

1995 Multi Media, Complete Scholar.

1994 Nuts and Bolts of Teaching at the U.

Contributions to Undergraduate Textbook Revision:

Mader, S. S. Biology. W. C. Brown and Company, Dubuque, Iowa.

Purves, W. K., Orians, G. H. and Heller, H. C. Sinauer Associates and W. H. Freeman and Company.

Graduate Students:

Gregor Schuurman (Ph. D. scheduled July 2003, N.S.F. Fellowship 1995)

Kate Howe (Ph. D. December 2002, N.S.F. Fellowship 1996)

Daniel Hahn (continuing doctoral student, N.S.F. Fellowship honorable mention 1996, NOAA fellowship 1999)

Claire Jouseau

Theodore Kennedy (Ph. D. December 2002, N.S.F. Fellowship honorable mention 1996, NASA Graduate Student Fellowship 1998-2001)

Heather Macrellis

Anita Bajpai (Completed Masters 1997, UCLA Medical School)
Shibin Li (Completed Masters 1997, UM Biomedical Computing)

External committee member:

Amy Downing, University of Chicago (Mathew Liebold, Advisor)
Zachary Long, Rutgers University (Peter Morin, Advisor)

Committees to date: 15

Undergraduate Student Research:

Leslie McGinnis, research training, University of Washington.
Stefanie Schmidt, research training, University of Washington.
Jessica Barkas, research training, NASA and University of Washington.
Chi Pham, University of Washington.
Jennifer Muslimi, University of Washington.
Tamara K. Harms, NASA fellowship, University of Washington.
Joshua Behr, research training, University of Minnesota.
Samuel Gale, REU, University of Minnesota.
J. Muir Hooper, REU, University of Minnesota.
Amy Grack, Honors Thesis, University of Minnesota.

Undergraduate Honors Committees:

2000. Knox College, Honors Program (one student).
1998. Swarthmore College, Honors Program (two students).

ILLUSTRATION

Cover of: *Biota*, R. K. Colwell (1997), Sinauer Associates.
Frontice piece for *Null Models in Ecology*, by N. Gotelli and G. R. Graves, (1996)
Smithsonian Institution Press.
A Primer for Population Biology, by N. Gotelli, (1996) Sinauer Associates, Sunderland.
Cover of: *Mites*, by M. A. Houck (1994), Chapman and Hall, London.
The Birder's Handbook for European Birds, by Paul R. Ehrlich, D. S. Dobkin, Stuart
Pimm, and D. Wheye (1994), Oxford Press, London.
The Birder's Handbook, by Paul R. Ehrlich, D. S. Dobkin, and D. Wheye (1988), Simon
and Schuster, N. Y.
Professional work exhibited twice (1980 and 1982) at the California Biological Art
shows, Oakland Museum, California.
Cover of: *The Natural Selection of Populations and Communities*, by D. S. Wilson,
Benjamin/Cummings (1980), Menlo Park.

VISITING SCHOLAR

17-24 March 2001. Visiting Scholar, Umeå University, Sweden.
6-10 November 2000. Visiting Scientist, Imperial College of London, Silwood Park,
Ascot, Berks, U. K.
22-26 May 2000. Eminent Ecologist, Kellogg Biological Station, State University of
Michigan.

INVITED PAPERS

1. 1 December 2003. Predicting the ecosystem consequences of biodiversity loss at the landscape level: Employing and developing the BioMERGE framework. GCTE, Morelia, Mexico.
2. 18 November 2003. The Ecosystem Consequences of Biodiversity Loss: The Role of Multiple Trophic Interactions. Pennsylvania State University, PA.
3. 4 November 2003. Insuring the reliability of ecosystems through biodiversity preservation: Empirical and theoretical studies of the ecological consequences of biodiversity loss in a prairie grassland assemblage. Weese Lecture, Zoology Department, University of Oklahoma.
4. 26 September 2003. The ecosystem consequences of biodiversity loss: The role of multiple trophic levels in a grassland ecosystem. Department of Biology, Indiana University, Bloomington, IN.
5. 5 December 2002. Biodiversity loss, ecosystem functioning, and the erosion of intrinsic defenses against invasion. University of Pittsburgh.
6. 4 December 2002. Skyscraper Earth: The Ecological Implications of Biodiversity Loss. Pittsburgh Ecoforum, Eminent Biologist Lecture Series, Carnegie Museum of Natural History.
7. 21 November 2002. The Functional Significance of Biodiversity and the Ecological Consequences of its Decline: Insights from Theoretical and Empirical Studies. University of Calgary, Calgary, Canada.
8. 19 November 2002. Skyscraper earth: How reliable are increasingly depauperate ecosystems? University of Calgary, Calgary, Canada.
9. 8 November 2002. Biodiversity loss, ecosystem functioning, and the erosion of intrinsic defenses against invasion. Cornell University, Ithaca, NY.
10. 9 October 2002.(student-invited) "The Functional Significance of Biodiversity and Ecological Consequences of its Decline: Insights from Theoretical and Empirical Studies". University of Illinois, Champaign-Urbana.
11. 23 September 2002. Does biodiversity matter? Radical ecological experiments and theory for a seemingly absurd question. Columbia University, New York.
12. 25 September 2002. Biodiversity loss, ecosystem functioning, and the erosion of intrinsic defenses against invasion. Columbia University, New York.
13. 5 August 2002. Using biodiversity-functioning theory as a foundation for ecological restoration Symposium #3, Ecological Theory and Restoration Ecology, Ecological Society of America, Tuscon, Arizona.
14. 15 March 2002. Ecosystem reliability. School of Biological Sciences, University of Nebraska, Lincoln.
15. 14 March 2002. The ecosystem consequences of biodiversity loss. School of Biological Sciences, University of Nebraska, Lincoln.
16. 13 February 2002. The ecological consequences of biodiversity loss. Western Washington University.
17. 1 February 2002. Ecological consequences of biodiversity loss. Biological Research Laboratories. Syracuse University.
18. 30 December 2001. Ecosystem reliability. The University of California, Davis.
19. 29 December 2001. The ecosystem consequences of biodiversity loss. The University of California, Davis.

20. 7 August 2001. Functional versus species richness in ecosystem response to global change: Can they be disentangled? Ecological Society of America, Madison, WI.
21. 19 July 2001. Biodiversity and ecosystem functioning. Frontiers in Tropical Ecology, Bangalore, India.
22. 17 July 2001. The role of biodiversity in the functioning of tropical ecosystems. Association for Tropical Biology, Annual Meetings, Bangalore, India.
23. 13 June 2001. From bestiarries to BioCON: Disentangling functional from taxonomic diversity. Cedar Creek Natural History Area, Univ. Minnesota.
24. 30 November 2001. Ecosystem reliability. University of California, Davis.
25. 29 November 2001. The ecosystem consequences of biodiversity loss. University of California, Davis.
26. 17-22 March 2001. 4 papers delivered, Umeå University, Sweden.
 - a. The ecosystem consequences of biodiversity loss: a review of the issues.
 - b. Functional versus species diversity: the role of trophic versus intra-trophic groups in biodiversity studies.
 - c. Ecosystem reliability and biological insurance: new twists in the diversity-stability debate.
 - d. New frontiers in biodiversity and ecosystem functioning research.
27. 14 March 2001. Ecosystem impacts of biodiversity loss in a N and CO₂ -enriched environment: Complex consequences of coupled communities. University of British Columbia, Canada.
28. 13 March 2001. Economics and ecology – is growth always good? (J. Edwards and D. Huppert, Co-contributors to Colloquium). Sigma Xi and Washington Alpha Chapter of Phi Beta Kappa. University of Washington, Seattle.
29. 5 March 2001. Biodiversity and ecosystem reliability. Friedrich-Schiller Universität, Jena, Germany.
30. 9 Feb 2001. The ecosystem consequences of declining biodiversity: An emerging paradigm. University of Tennessee, Knoxville (selected by graduate students).
31. 6-9 Feb 2001. The ecological consequences of declining biodiversity. McMaster University, Hamilton, Ontario, Canada.
32. 26-27 October 2000. Ecosystem consequences of biodiversity loss. Distinguished Scientist's Seminar Series. Marine Biological Laboratories, Wood's Hole, MA.
33. 5-6 October 2000. Ecosystem consequences of biodiversity loss. Miami University, Oxford, Ohio.
34. 12 June 2000. Ecosystem consequences of biodiversity loss. CREAM, Majorca.
35. 8 June 2000. Ecosystem consequences of biodiversity loss. CREAM, Barcelona, Spain.
36. 24 Feb 2000. Ecosystem consequences of biodiversity loss. Knox College, Galesburg, Illinois.
37. 27 Jan 2000. Ecosystem consequences of biodiversity loss: the evolution of contemporary approaches. In symposium, "Fundamental principles in ecology and evolution: can paradigms stand the test of time?" Western Society of Naturalists. Monterey, California.
38. 28 October 1999. The ecological consequences of declining biodiversity. Victoria University, Victoria, Canada.

39. 28 October 1999. The ecological consequences of declining biodiversity. Simon Fraser University, Vancouver, Canada.
40. 5 October 1999. Ecosystem reliability: Getting out of the stability-complexity quagmire in valuing biodiversity. Griffith University, Brisbane, Australia.
41. 2 October 1999. The ecosystem consequences of biodiversity loss. Griffith University, Gold Coast, Australia.
42. 1 October 1999. The ecosystem consequences of biodiversity loss. Griffith University, Brisbane, Australia.
43. 28 September 1999. Functional versus taxonomic diversity in assessing the impact of biodiversity loss. Key Center for Biodiversity and Bioresources, Sydney Australia.
44. 11 February 1999. The ecological consequences of biodiversity loss: evaluating the results from grassland, greenhouse, and growth chamber experiments. Ecology Center, Utah State University, Logan, Utah.
45. 10 February 1999. Ecosystem reliability: An alternative to the diversity/stability debate. Ecology Center, Utah State University, Logan, Utah.
46. 2 December 1998. The ecological consequences of declining biodiversity: evaluating conflicting empirical assessments. Washington University, St. Louis, Missouri.
47. 1 December 1998. The critical role of redundant species: getting out of the stability-complexity quagmire. University of Missouri, St. Louis, Missouri.
48. 12 October 1998. Biodiversity and ecosystem reliability. Landouwuniversiteit, Wageningen, The Netherlands
49. 20 April 1998. The ecological consequences of declining biodiversity: the empirical evidence. Department of Ecology and Evolution, University of Chicago, Illinois.
50. 26 March 1998. How changes in biodiversity may affect the provisioning of ecosystem services. Missouri Botanical Gardens, St. Louis, Missouri.
51. 5 February 1998. Ecological consequences of declining biodiversity. Department of Zoology, University of Washington, Seattle.
52. 18 December 1997. Ecological consequences of declining biodiversity. Department of Ecology and Evolution, Rutgers University, NJ.
53. 7 November 1997. Biodiversity and ecological complexity. Kyoto University, Japan.
54. 9 November 1997. Biodiversity and ecological complexity. Ehime University, Japan.
55. 29 April 1997. Causes and consequences of variation in biodiversity: tests of prevailing theory. Stanford University, Stanford, California.
56. 21 March 1997. Ecosystem sensitivity to variation in species richness: lessons from a collapsing building. University of Sweden, Uppsala.
57. 6 January 1997. Ecological consequences of declining biodiversity. Institute Botanische, Basel Switzerland.
58. 21-23 November 1996. Two lectures: (1) Ecological consequences of declining biodiversity. (2) Non-density based impacts of species on communities and ecosystems. University of Texas at Austin.
59. 28 September - 2 October 1996. Ecological consequences of declining biodiversity. University of Arizona, Tucson.
60. 15 March 1995. Two invited lectures: (1) The ecological consequences of declining biodiversity: An experiment using the Ecotron. (2) The ecological consequences of

declining biodiversity: microcosm experiments with plants and microbes. University of California, Davis.

61. July 88. Resource heterogeneity and the structure of arthropod assemblages in phytotelmata. International Congress of Entomology, Vancouver, Canada.
62. November 87. Advanced Education Projects Computing Fair, U. C. Berkeley. Instructional Programs for Ecology.

WORKSHOPS

1. 7-9 January 2004. Experimental Model Systems in Community Ecology, NSF, Washington, DC.
2. 12-15 December 2003. National Center for Ecological Analysis and Synthesis, Microbial Biodiversity Working Group (II). Santa Barbara, CA.
3. 15-16 November 2003. U. N. Millennium Development Goals, Task Force 6. Columbia University, New York.
4. 13-14 November 2003. The Endangered Species Act at 30 Years (II). University of California, Santa Barbara.
5. 27 – 29 May 2003. Bren School of the Environment and The Nature Conservancy, The Endangered Species Act at 30. Santa Barbara, CA.
6. 12 – 13 May 2003. National Science Foundation, Research Coordinating Network Meeting. Washington, DC.
7. 20 – 23 March 2003. National Center for Ecological Analysis and Synthesis, Microbial Biodiversity Working Group. Santa Barbara, CA.
8. 13 – 16 February 2003. Millennium Ecosystem Assessment, Cross Cutting Meeting. Gland, Switzerland.
9. 7-11 January 2003. DIVERSITAS. Core Project Two. Biodiversity and Ecosystem Functioning. Paris, France.
10. 13-17 December 2002. Millennium Ecosystem Assessment, Conceptual Framework. San Francisco, CA.
11. 15-17 November 2002. The Endangered Species Act at 30 Years. University of California, Santa Barbara.
12. 31 October 2002. U. S. National Academy of Sciences, DIVERSITAS workshop. Beckman Center, Irvine, California.
13. 28 July – 3 August 2002. Climate Change Impacts and Integrated Assessment. Snowmass, Colorado.
14. 11 – 16 July 2002. Aldo Leopold Leadership Program, All Cohort Workshop, Tuscon, Arizona.
15. 6 – 11 June 2002. Biodiversity and Ecosystem Functioning, Healthy Ecosystems – Healthy People. Washington, DC.
16. 18 – 21 April 2002. Millennium Ecosystem Assessment, Port of Spain, Trinidad.
17. 5 – 6 April 2002. OTS Board Meetings, San Jose, Costa Rica.
18. 14-18 January 2002. Economic valuation of biodiversity. Royal Society for the Protection of Birds. Cambridge, UK.
19. 25-27 October 2001. Site Review. National Phytotron. Duke University, North Carolina.

20. 6-7 March 2001. International panel to evaluate a long-term biodiversity experiment proposal. German Science Foundation, Max-Planck-Institut für Biogeochemie, and University of Jena, Germany.
21. 23-25 February 2001. Microbial ecology and genomics: A crossroads of opportunity. American Academy of Microbiology, West Palm Beach, Florida.
22. 22-25 August 2000. Defying Nature's End. Conservation International, Pasadena, CA.
23. 7-10 November 1999. Biodiversity and Ecosystem Functioning, GCTE/NCEAS.
24. 26-29 March 1998. Managing human-dominated ecosystems. Missouri Botanical Gardens, St. Louis, Missouri.
25. 7-9 November 1997. Biodiversity and Ecological Complexity. Kyoto, Japan.
26. 1-3 October 1997. Managing forest stands in a changing landscape: by design or default? Cloquet Forestry Center, Minnesota.
27. 17-19 March 1997. Biodiversity and Ecosystem Functioning. Ekanäs, Sweden.
28. 4-6 September 1996. Biosphere 2 and Biodiversity, Oracle, Arizona.
29. 17 June 1996. Total value of the world's ecosystem services and natural capital. NCEAS, Santa Barbara, CA.
30. 8 April 1996. Climate change and biodiversity, Smithsonian Institute, Washington D.C.
31. 23 September 1995. Global change and ecological complexity workshop. GCTE, Cedar Creek, Minnesota.
32. 27 March 1994. SCOPE. Ecosystem function of biodiversity. Asilomar, California.

PAPERS DELIVERED

- 8/98 Ecological Society of America, annual meetings, Baltimore, Maryland. Naeem, S.,* J. Knops, D. Tilman, K. Howe, T. Kennedy, and S. Gale. University of Minnesota, St. Paul. Resident plant diversity and resistance to biological invasion at the level of the plant neighborhood.
- 8/97 Ecological Society of America, annual meetings, Albuquerque, New Mexico. "Non-abundance-based keystone species: Perturbation in a pitcher plant."
- 8/96 Ecological Society of America, annual meetings, Providence, Rhode Island. Naeem, S. and S. Li. "The critical role of species 'redundancy' in a species-rich world.
- 8/94 INTECOL, Manchester, U.K. Naeem, S. *et al.* Does biodiversity matter? A test of the association between diversity and ecosystem functioning.
- 8/94 Ecological Society of America, annual meetings, Knoxville, TN. Naeem, S. *et al.* Does biodiversity matter? A test of the association between diversity and ecosystem functioning.
- 8/93 Ecological Society of America, annual meetings, Madison, WI. Naeem, S. Population growth on a heterogeneous resource as described by the negative binomial distribution.
- 12/93 British Ecological Society, annual Winter meetings. Naeem, S. *et al.* Does biodiversity matter? A test of the association between diversity and ecosystem functioning.

- 8/90 Ecological Society of America, Snowbird, Utah. An examination of predator-prey limit cycles: how good is the evidence?
- 8/88 Ecological Society of America, Davis, California. Resource-mediated interactions can structure arthropod assemblages in *Heliconia wagneriana* microcosms.
- 8/88 Association for Tropical Biology, Davis, California. Resource heterogeneity and the structure of tropical arthropod assemblages: studies on the *Heliconia imbricata* microcosm.
- 6/88 Society for the Study of Evolution and American Society of Naturalists, Asilomar, Pacific Grove, California. Ecological consequences of dispersal in a heterogeneous environment.
- 12/87 Entomological Society of America, National Meeting, Boston, Ma. Culicids, chironomids, and copepods: Why *Trichoprosopon digitatum* (Diptera: Culicidae) doesn't colonize water-filled *Heliconia* (Musaceae) bracts.
- 8/87 Ecological Society of America, National Meeting, Columbus, Ohio. Resource heterogeneity fosters coexistence of a mite and a midge in pitcher plants.
- 3/87 Southwestern Regional Population Biology Conference, Riverside, California. "Abiotic and biotic processes and the structure of *Darlingtonia californica* communities.
- 6/84 Ecological Society of America, Western Division, San Francisco, California. "Resource and environmental heterogeneity and community structure in a small world: *Darlingtonia californica* and its community of arthropod associates."
- 8/84 Entomological Society of America, Pacific Division, San Francisco, California. "Ontogenetic strategies and coevolution between *Darlingtonia californica* and its community of arthropod associates."

GRANTS

- 2003-2006. Interactions among biodiversity, CO₂, and N deposition in grasslands. N. S. F. (P. Reich et al.) NSF. Biocomplexity. \$1,500,000 (3 years).
- 2002 – 2007. Research Coordinating Networks: BioMERGE. NSF. \$500,000.
- 2000-2003. Renewal: Interactions among biodiversity, CO₂, and N deposition in grasslands. N. S. F. (*third PI* with P. Reich, D. Tilman, and J. Knops) \$1,500,000 (3 years).
- 2000 – 2006. LTER: Biodiversity, disturbance and ecosystem functioning at the prairie-forest border. D.Tilman, S.Hobbie, P.Reich, M.Davis, J.Knops, S.Naeem, M.Ritcie, D.Wedin, C.Lehman Univ. of Minnesota (NSF pass-through; \$20,000/yr to S.Naeem) Total award. 4,200,000
- 1999-2000. University of Washington, Seminar Series on Herbivory (J. Maron, lead PI) \$3,250.
- 1998-1999. Institute for Social and Economic Sustainability. (56 PIs) U. Minnesota. \$50,000.
- 1998-2001. National Science Foundation, Environmental Biology, CAREER (Naeem) \$210,000.
- 1997-1999. National Science Foundation, Environmental Biology, LTER. (D. Tilman, P. Reich, M. Ritchie, D. Wedin, J. Knops, S. Naeem). Succession, Biodiversity and Ecosystem Functioning at the Prairie-Forest Border added during 3d year of 5 year grant for \$2,225,000.00.

- 1997-1999. National Science Foundation, Environmental Biology, Ecology. Community composition and biomass distribution (Naeem) \$100,000 (2 years).
- 1997-2000. Interactions among biodiversity, CO₂, and N deposition in grasslands. N. S. F. (*third PI* with P. Reich, D. Tilman, and J. Knops) \$1,500,000 (3 years)
- 1996-1998. Center for Community Genetics. (*Co PI* with G. May, D. Alstad, R. Shaw, D. Andow, J. Groth, P. Morrow) University of Minnesota \$50,000 (2 years) to establish a center through externally funded sources.
- 1994-1996. McKnight Land-Grant Professorship. (Naeem). \$60,000 (2 years).

PUBLICATIONS (Peer reviewed)

1. Hooper, D. U., J.J. Ewel, J.P. Grime, A. Hector, P. Inchausti, S. Lavorel, J.H. Lawton, D. Lodge, M. Loreau, **S. Naeem**, B. Schmid, H. Setälä, A.J. Symstad, J. Vandermeer, D.A. Wardle. (*in press*) Effects of biodiversity on ecosystem functioning: a consensus of current knowledge and needs for future research. *Ecological Applications*.
2. Reich, P. B., D. Tilman, **S. Naeem**, D. S. Ellsworth, J. Knops, J. Craine, D. Wedin, and J. Trost. 2004. Species and functional group diversity independently influence biomass accumulation and its response to CO₂ and N. *Proceedings of the National Academy of Sciences of the United States of America* 101:10101-10106.
3. Naeem, S. and J. P. Wright. 2003. Disentangling biodiversity effects on ecosystem functioning: Deriving solutions to a seemingly insurmountable problem. *Ecology Letters* 6: 567-579.
4. Craine, J. M., P. B. Reich, D. Tilman, D. Ellsworth, J. Fargione, J. Knops, S. Naeem. 2003. The role of plant species in biomass production and response to elevated CO₂ and N. *Ecology Letters* 6: 623-630.
5. Loreau, M., S. Naeem and P. Inchausti (eds.) 2002. *Biodiversity and Ecosystem Functioning: Synthesis and Perspectives*. Oxford University Press.
6. Balmford A., A. Bruner, P. Cooper, R. Costanza, S. Farber, R. E. Green, M. Jenkins, P. Jefferiss, V. Jessamy, J. Madden, K. Munro, N. Myers, S. Naeem, J. Paavola, M. Rayment, S. Rosendo, J. Roughgarden, K. Trumper, R. K. Turner. Economic reasons for conserving wild nature. *Science* 297: 950-953.
7. Naeem S. 2002. Disentangling the impacts of functional and taxonomic diversity on ecosystem functioning in synthetic-community experiments. *Ecology* 83: 2925-2935.
8. Kennedy, T., S. Naeem, K. Howe, J. M. H. Knops, D. Tilman, and P. B. Reich. 2002. Biodiversity as a barrier to ecological invasion. *Nature* 417:636-638.
9. Naeem, S. Ecosystem consequences of biodiversity loss: The evolution of a paradigm. 2002. Special Features of *Ecology* concerning role of paradigms in ecology. *Ecology* 83:1537-1552.
10. Reich, P., D. Tilman, J. Craine, D. Ellsworth, M. Tjoekler, J. Knops, D. Wedin, S. Naeem, D., Bahauddin, J. Goth, W. Bengston, T. Lee. 2001. Do functional groups differ in acquisition and use of C, N and water under varying atmospheric CO₂ and N deposition regimes? A field test using 16 grassland species from 4 functional groups. *New Phytologist* 150: 435-448.
11. T. Fukami, S. Naeem, and D. A. Wardle. 2001. On similarity among local communities in biodiversity experiments. *Oikos* 95: 340-348.
12. M. Loreau, S. Naeem, P. Inchausti, J. Bengtsson, J.P. Grime, A. Hector, D.U. Hooper, M.A. Huston, D. Raffaelli, B. Schmid, D. Tilman, and D.A. Wardle. 2001. Biodiversity and Ecosystem Functioning: Current Knowledge and Challenges. *Science* 294: 806-808.
13. Reich, P., J. Knops, D. Tilman, J. Cdaine, D. Ellsworth, M. Tjoelker, T. Lee, D. Wedin, S. Naeem, D. Bahauddin, G. Hendrey, S. Jose, K. Wrage, J. Goth, W, Bengston. 2001. Interaction of plant diversity, elevated CO₂, and nitrogen deposition on productivity in a grassland ecosystem. *Nature* 410: 809-812.

14. Naeem, S., D. Hahn, and G. Schuurman. 2000. Producer-decomposer codependency modulates biodiversity effects. *Nature* **403**: 762-764.
15. Naeem, S., J. M. H. Knops, D. Tilman, K. M. Howe, T. Kennedy, and S. Gale. 2000. Plant neighborhood diversity increases resistance to invasion in experimental grassland plots. *Oikos* **91**: 97-108.
16. Naeem, S. 1999. Power behind diversity's throne. *Nature* **401**: 653-654. (*Perspective piece.*)
17. Naeem, S., D. Byers, S. F. Tjossem, C. Bristow, and S. Li. 1999. Plant neighborhood diversity and production. *Ecoscience* **6**: 355-365.
18. Knops, J. M. H., D. Tilman, N. M. Haddad, S. Naeem, C. E. Mitchell, J. Haarstad, M. E. Ritchie, K. M. Howe, P. B. Reich, E. Siemann, and J. Groth. 1999. Effects of plant species richness on invasion dynamics, disease outbreaks, insects abundances and diversity. *Ecology Letters* **2**: 286-293.
19. Naeem, S. (chair), T. Chapin, Robert Costanza, Paul Ehrlich, Frank B. Golley, David Hooper, J. H. Lawton, Robert O'Neil, Harold Mooney, O. Sala, Amy Symstad, and David Tilman. 1999. Biodiversity and Ecosystem Functioning. *Ecological Issues* No. 4.
20. Colwell, R. K. and S. Naeem. 1999. Sexual sorting in hummingbird flower mites (Mesostigmata: Ascidae). *Annals of the Entomological Society of America* **92** (6): 952-959.
21. Naeem, S. 1998. Species redundancy in ecosystem reliability. *Conservation Biology* **12**: 39-45.
22. Chapin, F. S. III. O. E. Sala, I. C. Burke, J. P. Grime, D. U. Hooper, W. K. Lauenroth, A. Lombard, H. A. Mooney, A. R. Mosier, S. Naeem, S. W. Pacala, J. Roy, W. L. Steffan, and D. Tilman. 1998. Ecosystem consequences of changing biodiversity. *BioScience* **48**:45-52.
23. Lawton, J. H., S. Naeem, L. J. Thompson, A. Hector and M. J. Crawley. 1998. Biodiversity and ecosystem function: getting the Ecotron experiment in its correct context. *Functional Ecology* **12**: 843-856.
24. Naeem, S., K.-I. Kawabata and M. Loreau. 1998. Biodiversity and ecosystem functioning in the Western Pacific (conference review). *Trends in Ecology and Evolution* **13**: 134-135.
25. Naeem, S. and S. Li. 1998. Non-decomposer heterotrophic diversity and autotrophic biomass. *Ecology* **79**: 2603-2615.
26. Naeem, S., and S. Li. 1997. Biodiversity enhances ecosystem reliability. *Nature* **390**:507-509.
27. Costanza, R., R. D'Arge, R. de Groot, S. Farber, M. Grasso, B. Hannon, K. Limburg, S. Naeem, R. V. O'Neil, J. Paruelo, R. G. Raskin, P. Sutton, and M. van den Belt. 1997. The value of the world's ecosystem services and natural capital. *Nature* **387**: 253-260.
28. Thompson, L. J. and S. Naeem. 1996. Soil warming and plant recruitment. *Plant and Soil*. **182**: 339-343.
29. Naeem, S., K. Haakenson, L. J. Thompson, J. H. Lawton, and M. J. Crawley. 1996. Biodiversity and plant productivity in a model assemblage of plant species. *Oikos* **76**: 259-264.

30. Naeem, S., L. J. Thompson, S. P. Lawler, J. H. Lawton, and R. M. Woodfin. 1995. Biodiversity loss in model ecosystems. Reply. *Nature* 375:561.
31. Naeem, S., L. J. Thompson, S. P. Lawler, J. H. Lawton, and R. M. Woodfin. 1995. Biodiversity and ecosystem functioning: empirical evidence from experimental microcosms. *Philosophical Transactions of the Royal Society, London, B.* 347: 249-262.
32. Naeem, S., L. J. Thompson, S. P. Lawler, J. H. Lawton, and R. M. Woodfin. 1994. Declining biodiversity can affect the functioning of ecosystems. *Nature* 368: 734-737.
33. Naeem, S. and T. Fenchel. 1994. Population growth on a patchy resource: some insights provided by studies of a histophagous protozoan. *Journal of Animal Ecology* 63: 399-409.
34. Naeem, S. and B. A. Hawkins. 1994. Minimal community structure: how parasitoids divide resources. *Ecology* 75: 79-85.
35. Edwards, S. V. and S. Naeem. 1994. Homology and comparative methods in the study of avian cooperative breeding. *American Naturalist* 143: 723-733.
36. Edwards, S. and S. Naeem 1993. The phylogenetic component of cooperative breeding in passerine birds. *The American Naturalist* 141:754-789.
37. Lawton, J. H. , S. Naeem, R. M. Woodfin, V. K. Brown, A. Gange, H. J. C. Godfray, P. A. Heads, S. Lawler, D. Magda, C. D. Thomas, L. J. Thompson, and S. Young. 1993. The Ecotron: a controlled environmental facility for the investigation of population and ecosystem processes. *Philosophical Transactions of the Royal Society of London B* 341:181-194.
38. O'Connor, B., R. K. Colwell, and S. Naeem. 1991. Hummingbird flower mites of Trinidad: Genus Proctolaelaps (Acari: Ascidae). *Great Basin Naturalist* 4: 348-376.
39. Naeem, S. 1990. Patterns of the distribution and abundance of competing species when resources are heterogeneous. *Ecology* 71: 1422-1429.
40. Naeem, S. 1990 Resource heterogeneity and community structure: a case study in *Heliconia imbricata* phytotelmata. *Oecologia* 84: 29-38.
41. Naeem, S. 1989. Predator-prey interactions and community structure: chironomids, mosquitoes and copepods in *Heliconia imbricata* (Musaceae). *Oecologia* 77: 202-209.
42. Losos, J. B., S. Naeem, R. K. Colwell. 1989. Hutchinsonian ratios and statistical power. *Evolution* 43: 1820-1826.
43. Naeem, S. 1988. Resource heterogeneity fosters the coexistence of a mite and a midge in a pitcher plant. *Ecological Monographs* 58: 215-227.
44. Naeem, S., D. S. Dobkin, and B. O'Connor. 1985. Lasioseius mites (Acarina: Gamasida) associated with hummingbird flower mites in Trinidad, W. I. *International Journal of Entomol.* 27: 338-353.
45. Colwell, R. K. and S. Naeem. 1979 (undergraduate honors thesis). The first known hummingbird flower mite north of Mexico: *Rhinoseius epoecus* n. sp. (Mesostigmata: Ascidae). *Annals of the Entomological Society of America* 72: 485-491.

Publications (Book chapters, reviews, and others)

1. Naeem, S. (forthcoming). Biodiversity and Ecosystem Functioning in Restored Ecosystems: Extracting Principles for a Synthetic Perspective. In, (Falk, D., M. Palmer, J. Zedler, eds.) *Foundations of Restoration Ecology*, Island Press.
2. Naeem, S., R. Waples and C. Moritz. (forthcoming). A theoretical view of what it means to preserve nature and natural processes. In, *The Endangered Species Act at 30*, Island Press.
3. Naeem, S. and C. Jouseau. (forthcoming). Biodiversity and ecosystem services: how do currently listed endangered species relate to the preservation of ecosystem services? In, *The Endangered Species Act at 30*, Island Press.
4. Naeem, S. 2003a. Continuing debate in the face of biodiversity loss. *Oikos* 100:619.
5. Naeem, S. 2003c. Models of ecosystem reliability and their implications for the question of expendability. Pages 109-139 in P. Kareiva and S. A. Levin, editors. *The Importance of Species*. Princeton University Press, Princeton.
6. Naeem, S. et al., 2003. Ecosystems and their services. Pp. 49-70 in, *Ecosystems and Human Well-Being: A Framework for Assessment*. The Millennium Ecosystem Assessment. Island Press.
7. Naeem, S. 2003. The world according to niche. Book review. *TREE* 18: 323-324
8. Levine, J. M., T. Kennedy, and S. Naeem. 2002. Neighbourhood scale effects of species diversity on biological invasions and their relationship to community patterns. Pages 114-124 in M. Loreau, S. Naeem, and P. Inchausti, editors. *Biodiversity and ecosystem functioning: synthesis and perspectives*. Oxford University Press, Oxford.
9. Loreau, M., S. Naeem, and P. Inchausti. 2002. Perspectives and challenges. Pages 237-242 in M. Loreau, S. Naeem, and P. Inchausti, editors. *Biodiversity and Ecosystem Functioning: Synthesis and Perspectives*. Oxford University Press, Oxford.
10. Naeem, S., M. Loreau, and P. Inchausti. 2002. Biodiversity and Ecosystem Functioning: The emergence of a synthetic ecological framework. Pages 3-11 in M. Loreau, S. Naeem, and P. Inchausti, editors. *Biodiversity and ecosystem functioning: synthesis and perspectives*. Oxford University Press, Oxford.
11. Petchey, O. L., P. J. Morin, F. Hulot, M. Loreau, J. McGrady-Steed, G. Lacroix, and S. Naeem. 2002. Contributions of aquatic model systems to our understanding of biodiversity and ecosystem functioning. Pages 127-138 in M. Loreau, S. Naeem, and P. Inchausti, editors. *Biodiversity and Ecosystem Functioning: Synthesis and Perspectives*. Oxford University Press, UK, Oxford.
12. Naeem, S. 2002. Biodiversity equals instability? *Nature* **416**:23-24.
13. Naeem, S. 2002. Autotrophic-heterotrophic interactions and their impacts on biodiversity and ecosystem functioning. Pages 96-114 in A. Kinzig, S. W. Pacala, and D. Tilman, editors. *The functional consequences of biodiversity*. Princeton University Press, Princeton, New Jersey.
14. Naeem, S. 2001. Review of *The World According to Pimm*. *The American Zoologist* 41: 1241-1242
15. Naeem, S. 2001. Powering earth. *Review of Terrestrial Global Productivity*. *Ecology* 83: 589-590.
16. Davis, M. A., D. Tilman, S. Hobbie, C. L. Lehman, P. B. Reich, J. M. H. Knops, S. Naeem, M. E. Ritchie, D. A. Wedin. 2001. Public access and use of electronically

- archived data: Ethical considerations. *Bulletin of the Ecological Society of America* 82: 90-91.
17. Naeem, S. 2001. Functioning of biodiversity. *Encyclopedia of Global Environmental Change*. J. Wiley and Sons.
 18. Naeem, S. 2001. Complexity versus diversity. In (Levin, S. A.) *Encyclopedia of Biodiversity*. Academic Press, V. 1. Pp. 831..843.
 19. Naeem, S. 2001. How changes in biodiversity may affect the provisioning of ecosystem services. In (Hollowell, V. C.) *Managing Human-Dominated Ecosystems*. Proceedings of the Symposium at the Missouri Botanical Garden, Monographs in Systematic Botany from the Missouri Botanical Garden, V. 84, pp. 3-33.
 20. Naeem, S. and S. F. Tjossem. 2001. R. M. May, Biography. *Encyclopedia of Global Environmental Change*. J. Wiley and Sons.
 21. Naeem, S. 2001. Experimental validity and ecological scale as tools for evaluating research programs. Pages 223-250 in R. H. Gardner, W. M. Kemp, V. S. Kennedy, and J. E. Petersen, editors. *Scaling relationships in experimental ecology*. Columbia University Press, New York.
 22. Naeem, S. 2000. Reply to Wardle et al. *Bulletin of the Ecological Society of America* 81:241-246.
 23. Naeem, S. 2000. Review of, "Experimental Ecology: Issues and Perspectives. *Quarterly Reviews of Biology* 75:489.
 24. Naeem, S. 2000. Expérimenter sur des écosystèmes. *La Recherche* 333:71-75.
 25. Naeem, S. 2000. Nature's rules of assembly. Review of (Weiher, E. and Paul Keddy, eds.) *Ecological assembly rules*. *Ecology* 81:1762-1763.
 26. Tilman, D., D. N. Duvick, S. B. Brush, R. J. Cook, G. C. Daily, G. M. Heal, S. Naeem, D. Notter. 1999. Task force report: Benefits of Biodiversity. Council for Agricultural Science and Technology, Ames.
 27. Naeem, S. and S. Li. 1998. A more reliable design for biodiversity study? -- Reply. *Nature* 394:30-31.
 28. Costanza, R., R. D'Arge, R. de Groot, S. Farber, M. Grasso, B. Hannon, K. Limburg, S. Naeem, R. V. O'Neil, J. Paruelo, R. G. Raskin, P. Sutton and M. van den Belt. 1998. Valuing ecosystem services: a response. *Regulation* 20: 2-3 (*Correspondence*).
 29. Naeem, S. 1997. Synthesis of ecology and conservation (book review). *Trends in Ecology and Evolution* 12: 456.
 30. Naeem, S. 1996. Patterns in the distribution and abundance of species (article review). *Trends in Ecology and Evolution* 11: 400-401.
 31. Dirzo, R., Naeem, S., and Hall Cushman. (1996). Cross biome comparisons: Biotic linkages. In, *Biodiversity and Ecosystem Functions: Cross Biome Comparisons*. SCOPE / UNEP.
 32. Naeem, S., L. J. Thompson, T. H. Jones, J. H. Lawton, S. P. Lawler, and R. M. Woodfin. 1996. Changing community composition and elevated CO₂. In, Ch. Körner, F. A. Bazzaz (eds.) *Carbon Dioxide, Populations, and Communities*. Physiological Ecology Series, Academic Press, San Diego. pp. 93-99.
 33. Naeem, S., J. H. Lawton, L. J. Thompson, S. P. Lawler, and R. M. Woodfin. 1995. Biotic diversity and ecosystem processes: using the Ecotron to study a complex relationship. *Endeavour* 19: 58-63.

34. Colwell, R. K. and S. Naeem. 1994. Life history patterns of hummingbird flower mites in relation to host phenology and morphology. Pages 23-44, in Houck, M. A. (ed.) *Mites: Life History and Reproductive Patterns of Mites*. Chapman and Hall, London.
35. Naeem, S. 1992. Review of Gee, J. H. R. and P. S. Giller, Organization of communities past and present. *Journal of Tropical Ecology*: 509-510.
36. Naeem, S. and R. K. Colwell. 1991. Ecological consequences of heterogeneity of consumable resources. Pages 224-255, in, J. Kolasa and S. T. A. Pickett (eds.), *Ecological Heterogeneity*, Springer Verlag, N.Y.
37. Heyneman, A. J., R. K. Colwell, S. Naeem, D. S. Dobkin. 1991. Host plant discrimination: experiments with hummingbird flower mites. Pages 455-487 in, Price, P. W., T. Lewinsohn, and G. W. Fernandes, *Plant-Animal Interactions*. John-Wiley and Sons, New York.
38. Naeem, S. 1991. Ecological interactions, part 2. Pages 122-125. *McGraw-Hill Yearbook of Science and Technology*. McGraw-Hill, San Francisco.
39. Naeem, S. 1988. Ecology of species inhabiting heterogeneous habitats: case studies with phytotelmata. Ph. D. dissertation, Univ. of California, Berkeley, California.
40. Naeem, S., and J. Dusheck. 1985. Plumbing the deathly depths of the California pitcher plant. *Pacific Discovery* 38: 26-31.