

TIMOTHY S. WHITTIER

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BACKGROUND SUMMARY:

Twelve years of college level teaching, applied conservation and ecological research as well as extensive experience working on community resource development and volunteer management. Special skills in monitoring protocol, database management and grants administration.

EXPERIENCE:

Arizona Western College / Northern Arizona University Yuma, Arizona **2002- Present**

Professor of Environmental Science and Biology, Department of Math, Science and Agriculture

Teach Environmental Science, Ecology, Genetics, Entomology, Ecological Monitoring and Introductory Biology courses for both Arizona Western College (AWC) and Northern Arizona University -Yuma (NAU). Serve as the coordinator for the AWC/NAU 2+2 programs including the Environmental Science, Biology and Secondary Education-Biology programs which enables students to complete an A.S. Degree at AWC and the B.S. Degree at NAU-Yuma. Lead students on a variety of field trips. Serve on academic committees as assigned.

- Developed and taught Environmental Science 101. A non-majors course introducing environmental sciences with a focus on ecology, climate, human health, pollution, and water issues. More than 150 students per year enroll in this course.
- Developed new B.S. degree programs for the Yuma campus in Biology.
- Science major's enrollment has increased ten-fold since my hire.
- Obtained grants from BLM, USGS and NSF.
- Instrumental in placing dozens of students in paid internships.
- Developed and led students on single day and on multi-day field trips to the Laguna Mountains of California, the San Pedro River in Arizona, Pena Blanca, Arizona, Grand Canyon, Arizona and to the Gray Ranch in New Mexico.
- Served as co-chair of the AWC-NAU Advisory Task Force
- Assist in teaching a vegetation monitoring course with The Nature Conservancy and a private company by the name of Sound Science LLC at various locations in the United States.

The Nature Conservancy

Boise, Idaho

1999-2002

National Monitoring and Adaptive Management Program Assistant

Provide remote and on-site technical support to national and international staff of The Nature Conservancy regarding proper methodology of monitoring land owned or controlled by The Nature Conservancy.

- ◆ Taught the Vegetation Monitoring in a Management Context workshop to The Nature Conservancy, federal partners, tribes, other non-profit conservation agencies and private industry.
- ◆ Managed the Rodney Johnson / Katharine Ordway Stewardship Endowment and awarded proceeds from this endowment (>\$350,000 annually), via competitive grant applications, to support conservation efforts around the world.
- ◆ Managed the Aridlands Grazing Network tasked with developing policy and guidance for management of more than 40 Conservancy arid land sites in the western United States comprising several million acres.
- ◆ Team member developing a working paper on how to evaluate and monitor ecosystem integrity.
- ◆ Created a bibliographic database of more than 4,000 citations related to conservation biology.
- ◆ Developed and secured funding for an undergraduate internship program for the Boise office.
- ◆ Instructor for GPS training.

Albertson College of Idaho
Adjunct Faculty in Biology

Caldwell, Idaho

1999-Present

Taught classroom and laboratory sections in the Biology department of the number one ranked private liberal arts school in the west.

- ◆ Taught Organismal Biology - a freshman level class for biology majors introducing students to the diversity of life, experimental design, metabolic processes, statistical analysis, development and evolution.
- ◆ Led groups of 24 freshman students to the Oregon Coast to study invertebrate biology and marine ecology (1999 and 2000).
- ◆ Taught laboratory sections of Population Biology - working with students on evolution, field ecology, taxonomy, experimental design, scientific writing, statistical analysis, peer review and oral presentations of scientific work.
- ◆ Led a seven day field trip to the Oregon Coast to conduct marine ecology research with 12 undergraduate students.
- ◆ Advised students with various research questions and/or projects as well as served as a reference for job, scholarships or internships.

Treasure Valley United Way

Boise, Idaho

1998 - 1999

Director of Retired and Senior Volunteer Program Services

Director of Gifts in Kind

Coordinated volunteer activities for more than 800 senior aged volunteers in Ada and Elmore counties. Managed all non-cash donations to the United Way.

- ◆ Managed more than 800 senior aged volunteers who contributed more than 165,000 hours of volunteer service.
- ◆ Secured competitive and ongoing funding for the volunteer program.
- ◆ Secured extra-mural funding for a special program to assist volunteering in the schools.
- ◆ Served as the lead representative for the Building Communities task force as well as the 211 Idaho project to develop a toll-free telephone and internet-based information, referral and assistance service for the state of Idaho.
- ◆ Managed all non-cash donations (>\$150,000 annually) to the United Way and distributed these donations to appropriate non-profit agencies in the Boise area.
- ◆ Hosted two recognition events for volunteers in Ada County attended by more than 500 volunteers. Special speakers included the Governor, Mayor and national volunteer coordinators.
- ◆ Supervised four paid staff.

Idaho Department of Health and Welfare

Boise, Idaho

1995 - 1998

Health Policy Supervisor / Idaho Primary Care Office

Supervised statewide health systems improvement programs including the Maternal & Child Health State Systems Development Initiative, Health Services Information and Referral Program, Idaho CareLine, Primary Care Office, Rural Health Office, and the Health Professional Loan Repayment Program.

- ◆ Secured and managed more than \$850,000 in grants annually.
- ◆ Developed and received approval for more than 56 Federal Health Professional Shortage Areas designations.
- ◆ Responsible for health care delivery in rural Idaho.
- ◆ Led the Maternal and Child Health State Systems Initiative.
- ◆ Coordinated production and publication of the State Health Needs Assessment.
- ◆ Assisted with the recruitment of more than 30 health professionals into rural or other medically under-served areas of Idaho.
- ◆ Coordinated National Public Health Service physicians in Idaho.
- ◆ Supervised up to seven staff.

Health Services Information and Referral Program Manager / Idaho CareLine

Managed the Idaho CareLine, a bilingual, statewide health and human service telephone information and referral hotline.

- ◆ Developed an information and referral system that had been helping less than 10 persons per month to one that was serving up to 1,400 persons per month at 17% less cost.

BIOLOGY

BIO 100 Biology Concepts	Arizona Western College	2002, 2003
BIO 199 Independent Projects	Arizona Western College	2002-Present
BIO 240 Genetics and Evolution	Arizona Western College	2003-2007
BIO 244 Genetics Laboratory	Arizona Western College	2006-2007
BIO 199 Independent Study	Arizona Western College	2003-
BIO 252 Entomology	Arizona Western College	2004, 2006
BIO 322 Entomology	Northern Arizona University	2004, 2006
BIO 340 Genetics and Evolution	Northern Arizona University	2003-2007
BIO 343 Genetics Laboratory	Northern Arizona University	2005, 2007
BIO 399 Ecological Monitoring	Northern Arizona University	2005-2007
Marine Biology Laboratory	Albertsons College of Idaho	2000
BIO 221 Population Biology Laboratory	Albertsons College of Idaho	1999
BIO 220 Organismal Biology and Laboratory	Albertsons College of Idaho	2000
Ecology Unit:	University of Hawaii	1993
Evolution Unit:	University of Hawaii	1989-1993

OTHER:

Honors Colloquium	Arizona Western College	2006
NSF Young Scholar Program:	University of Hawaii	1992
Haumana Minority Student Sponsor:	University of Hawaii	1991-1994
Animal Behavior Unit:	RyuKyu University, Japan	1991
Biodiversity and Man Series:	Honolulu Community Education	1993
Research Mentor for State Science Fair:	Hawaii State Schools	1990-1994
English as a Second Language:	Tohoku, Japan	1980-1981
Substitute Teacher:	School District #25	1994-1995
Completed All Required Secondary Education Certification Requirements except Student Teaching		

GRANTS:

- U.S. Department of the Interior, Bureau of Land Management Assistance Agreement. Seeds of Success. 2008. \$9,000
- U.S. Department of the Interior, Bureau of Land Management Assistance Agreement. Fuels Program Monitoring. 2008. \$15,000
- U.S. Department of the Interior, Bureau of Land Management Assistance Agreement. Fuels Program Monitoring. 2006. \$15,000
- U.S. Department of the Interior, Bureau of Land Management Assistance Agreement. Fuels Program Monitoring. 2005 \$12,060
- U.S. Department of Interior, Bureau of Land Management Assistance Agreement. Assessment of Survivorship of Tree Plantings at Mittry Lake. 2004. \$10,000
- National Science Foundation. Course, Curriculum, Laboratory Improvement Program. Incorporating Gas Chromatography and CHN Elemental Analysis into Undergraduate Science Laboratory Curricula: A Multidisciplinary Approach. 2003. (Co-PI) \$96,500
- U.S. Geological Survey and Arizona Western College. Environmental Sciences and Geology Collaborative Internships. (Co-PI) 2004-2007 \$ 155,352
 - Renewed for an addition \$20,000 in 2007
 - Renewed for an addition \$40,000 in 2008
- Retired and Senior Volunteer Program. 1999 \$ 99,276
- Idaho Office of Rural Health. 1997 \$ 52,000
- Idaho Office of Rural Health Unobligated Funds. 1997 \$ 33,393
- State Systems Development Initiative. 1997 \$200,000
- Primary Care Cooperative Agreement. 1998 \$ 97,000
- Primary Care Unobligated Funds. 1997 \$ 12,500
- California Department of Food and Agriculture. 1993 \$150,000
- Edward E. Ehrhorn Travel Grant. 1993 \$ 800
- University of Hawaii Travel Grant. 1992 \$ 1,000

AWARDS and CERTIFICATES:

Heartsaver Firstaid/CPR Certificate. 2007
Arizona Western College Excellence in Teaching Award. 2006
KTTI Teacher of the Month. February 2005
President's Prize, Entomological Society of America student paper competition, Behavior and Bionomics Subsection. Baltimore, Maryland. 1992
Achievement Reward for College Scientists (ARCS). 1991
Award for best research paper by a Ph.D. student. College of Tropical Agriculture and Human Resources student research symposium. 1991
Award for best research paper by a graduate student in Entomology. College of Tropical Agriculture and Human Resources Symposium. 1989
Employee of the Month. Quality Inn Hotel. 1986
GTE Math Science Scholarship. 1985
Jesse Gagon Memorial Scholarship. 1985
Coach of the Year - AYSO Honolulu District. 1992
Referee of Year - AYSO Honolulu District. 1993
Science Student of Year. 1976
Eagle Scout Award. 1975

PROFESSIONAL SERVICE:

Independent Living Impact Council. 1998 - 1999
Junior League of Boise InfoLink Planning Committee. 1997 - Present
"Get the Scoop" Planning Committee. 1997 - 1999
Ka Mea Kolo (student entomology club) Treasurer and President University of Hawaii. 1989-1992
Student representative, President's Council, College of Tropical Agriculture and Human Resources. 1991-1992
Judge - CTAHR symposium at University of Hawaii. 1992
Awards Committee - Hawaiian Entomological Society. 1992
Mentor to eight state High School Science Fair students. 1990-1993
Research sponsor for Haumana program for minority students. 1991 - 1994
Director of Research for NSF Young Scholar Summer Intern. 1992

PROFESSIONAL AFFILIATIONS:

Colorado River Delta Research Coordination Network	2005
The Nature Conservancy	1999 - 2003
Idaho Primary Care Association	1997 - 1998
Idaho Rural Health Coalition	1997 - 1998
Alliance of Information and Referral Systems	1995 - 2003
NW Alliance of Information and Referral Systems	1995 - 2003
Infant/Toddler Interagency Coordinating Council	1995 - 1997
Children's Health and Child Care Council	1997 - 1997
Entomological Society of America	1985 - 1996

REFEREE ACTIVITIES:

Journals and Books:

Journal of Economic Entomology
Proceedings of the Hawaiian Entomological Society
Annals of the Entomological Society of America
Psyche
Journal of Insect Behavior
Biological Journal of the Linnean Society
Encyclopedia of Information Systems

Grants:

RJ/KOSE Endowment (Nature Conservancy)

PUBLICATIONS:

1. Kaneshiro, K. Y., L. H. Arita-Tsutsumi, K. M. Kanegawa and T. S. Whittier. 1990. Behavioral ecology of natural populations of Tephritid fruit flies and the development of more effective control programs. Conference proceedings. Invitational Symposium. "Fighting Alien Fruit Flies In The Unique Hawaiian Environment."
2. Whittier, T. S. & K. Y. Kaneshiro. 1991. Male mating success and female fitness in the Mediterranean fruit fly (Diptera: Tephritidae). *Ann. Entomol. Soc. Am.* 84: 608-611.
3. Kaneshiro, K. Y., L. H. Arita, K. M. Kanegawa, J. S. Kurihara, A. T. Ohta, and T. S. Whittier. 1991. Sexual selection in Tephritid fruit fly species and its significance in the development of effective control methods. First Intl. Symp. Fruit Flies in Tropics. K. Lumpur, Malaysia, March 1988.
4. Van Steenwyk, R. A., K. Y. Kaneshiro, N. V. Hue and T. S. Whittier. 1992. Rubidium as an internal physiological marker for Mediterranean fruit fly (Diptera: Tephritidae). *J. Econ. Entomol.* 85: 2357-2364.
5. Whittier, T. S., K. Y. Kaneshiro & L. D. Prescott. 1992. Mating behavior of Mediterranean fruit flies (Diptera: Tephritidae) in a natural environment. *Ann. Entomol. Soc. Am.* 85: 214-218.
6. Shelly, T. E., T. S. Whittier, K. Y. Kaneshiro. 1993. Behavioral responses of Mediterranean fruit flies (Diptera: Tephritidae) to trimedlure baits: can leks be created artificially? *Ann. Entomol. Soc. Am.* 86: 341-351.
7. Whittier, T. S. & T. E. Shelly. 1993. Productivity of singly vs. multiply mated female Mediterranean fruit flies, (*Ceratitis capitata*) (Diptera: Tephritidae). *J. Kansas Entomol. Soc.* 66: 140-157.
8. Shelly, T. E. & T. S. Whittier. 1994. Effect of sexual experience on the mating success of males of the Mediterranean fruit fly, *Ceratitis capitata* (Diptera: Tephritidae). *Proc. Hawaiian Entomol. Soc.* 32: 91-94.
9. Whittier, T. S., F. Y. Nam, T. E. Shelly & K. Y. Kaneshiro. 1994. Male courtship success and female discrimination in the Mediterranean fruit fly (Diptera: Tephritidae). *J. Insect. Behav.* 7: 159-170.
10. Shelly, T. E., T. S. Whittier and K. Y. Kaneshiro. 1994. Sterile insect release and the natural mating system of the Mediterranean fruit fly, *Ceratitis capitata* (Diptera: Tephritidae). *Ann. Entomol. Soc. Am.* 87: 470-481.
11. Whittier, T. S. & K. Y. Kaneshiro. 1995. Intersexual selection in the Mediterranean fruit fly: does female choice enhance fitness? *Evolution* 49: 990-996.
12. Shelly, T. E. & T. S. Whittier. 1995. Lek location in the Mediterranean fruit fly: the influence of tree size, foliage density, and neighborhood. *Proc. Hawaii. Entomol. Soc.* 32: 113-121
13. Shelly, T. E., Whittier, T. S and E. M. Villalobos. 1995. Trimedlure affects mating success and mate attraction in male Mediterranean fruit flies. *Entomologia Experimentalis et Applicata.* 78: 181-185.
14. Shelly, T. E. and T. S. Whittier. 1996. Mating Competitiveness of Sterile Male Mediterranean Fruit Flies (Diptera: Tephritidae) in Male Only Releases. *Ann. Entomol. Soc. Am.* 89: 754-758.
15. Kaneshiro, K. Y., T. E. Shelly and T. S. Whittier. 1995. Biology and Control of the Mediterranean Fruit Fly: Lessons from Natural Populations. *Proceedings: The Medfly in California: Defining Critical Research.* pp. 199-214.
16. Nishida, R., T. E. Shelly, T. S. Whittier and K. Y. Kaneshiro. 2000. Alpha-copaene, a potential rendezvous cue for the Mediterranean fruit fly, *Ceratitis capitata*. *J. Chem. Ecology.* 26: 87-100.

BOOK CHAPTERS:

1. Shelly, T. E. & T. S. Whittier. 1994. Lek Behavior in Insects. 1994. In *Social Competition in Insects and Arachnids: Vol. I. Evolution of Mating Systems.* J. C. Choe and B. J. Crespi, eds. Princeton: Princeton Press.
2. Kaneshiro, K. Y., K. M. Kanegawa and T. S. Whittier. 1993. Sexual selection in Tephritid fruit flies and its implication in the sterile insect release method. In: *Fruit Flies: Biology and Management.* pp. 177-179. M. Aluja and P. Liedo eds. Springer-Verlag, New York.

NON-PEER REVIEW PUBLICATIONS:

1. Center for Vital Statistics and Health Policy. Health Needs Assessment for the State of Idaho. July, 1996.
2. Environmental Science Program Review. 1996-2004. Arizona Western College. October 2004
3. Fire Regime and Condition Class Assessment for the Lower Colorado between Imperial Dam and Laguna Dam. 2007

PRESENTATIONS AND SEMINARS:

- Whittier, T. S. 1998. How to Serve Your Community. Idaho's Promise Conference. Boise, Idaho.
- Whittier, T. S. 1997. Health Resources in the Community and How to Find Them. Treasure Valley Continuing Nursing Education Network. Boise, Idaho.
- Whittier, T. S. 1997. The History of Rural Health in Idaho. NorthWest Regional Rural Health Conference. Spokane, Washington.
- Whittier, T. S., T. E. Shelly & K. Y. Kaneshiro. 1993. Effect of sterile insect release on the natural mating system of the Mediterranean fruit fly. Entomological Society of America National Conference. Indianapolis, Indiana.
- Shelly, T. E. & T. S. Whittier. 1993. Chemically mediated mating success in the Oriental fruit fly. Entomological Society of America National Conference. Indianapolis, Indiana.
- Whittier, T. S. 1993. Male mating success and female fitness in the Mediterranean fruit fly, a lek mating species. Entomological Society of America, Pacific Branch Meeting. Portland, Oregon.
- Whittier, T. S. 1993. Intersexual selection in the Mediterranean fruit fly: does female choice enhance fitness? Society for the Study of Evolution Annual Meeting. Snowbird, Utah.
- Whittier, T. S. 1992. Mediterranean fruit fly mating behavior: Quantitative field and laboratory observations. Pacific Entomology Conference. Honolulu, Hawaii.
- Shelly, T. E. & T. S. Whittier. 1993. Mating competitiveness of sterile male medflies in a natural population. Pacific Entomology Conference. Honolulu, Hawaii.
- Whittier, T. S. & K. Y. Kaneshiro. 1992. Heritability of mating success in the Mediterranean fruit fly. Entomological Society of America National Conference. Baltimore, Maryland.
- Kaneshiro, K. Y., Y. Ito, O. Iwahashi, K. M. Kanegawa, H. Kuba & T. S. Whittier. 1991. Alternative mating strategies in the melon fly, *Dacus cucurbitae*. 22nd International Ethological Conference. Kyoto, Japan.
- Kanmiya, K., K. Y. Kaneshiro, K. M. Kanegawa & T. S. Whittier. 1991. Time domain acoustic analyses on the melon fly mating songs between populations of Hawaii and Japan. 22nd International Ethological Conference Satellite meeting. Naha, Okinawa Japan.
- Whittier, T. S. & K. Y. Kaneshiro. 1991. Mating behavior of wild Mediterranean fruit flies in a natural environment. First Hawaiian Entomological Society Conference. Honolulu, Hawaii.
- Whittier, T. S. & K. Y. Kaneshiro. 1991. Mating behavior of wild Mediterranean fruit flies in a natural environment. Entomological Society of America National Conference. Reno, Nevada.
- Whittier, T. S. & K. Y. Kaneshiro. 1990. Male mating success and female fitness in the Mediterranean fruit fly. Fourth International Congress of Systematic and Evolutionary Biology. College Park, Maryland.
- Kaneshiro, K. Y. & T. S. Whittier. 1990. Dynamics of Sexual Selection and differential mating success in the Mediterranean fruit fly, *Ceratitis capitata*. Fourth International Congress of Systematic and Evolutionary Biology. College Park, Maryland.
- Van Steenwyk, R. A., K. Y. Kaneshiro, N. V. Hue & T. S. Whittier. 1990. Marking Mediterranean fruit fly with rubidium for use in dispersal studies. Entomological Society of America National Conference. New Orleans, Louisiana.
- Whittier, T. S. 1990. Sexual selection and the mating system of the Mediterranean fruit fly. Presented at the Okinawa Prefecture fruit fly eradication facility in conjunction with the University of the Ryukyus. Naha, Okinawa, Japan.
- Kaneshiro, K. Y., K. M. Kanegawa & T. S. Whittier. 1990. Sexual selection in Tephritid fruit flies and its implication in the sterile insect release method. International symposium on fruit flies of economic importance. Antigua, Guatemala.
- Kaneshiro, K. Y., K. Kanegawa, J. Kurihara, A. Ohta, and T. S. Whittier. 1988. Significance of the lek mating system in Tephritid fruit fly species in Hawaii. XVIII International Congress of Entomology. Vancouver, B.C.
- Whittier, T. S. 1987. A positive correlation between mating success and longevity. Entomological Society of America National Conference. Boston, Massachusetts.

MEETINGS/WORKSHOPS ATTENDED:

- Biennial Conference on the Colorado Plateau. Flagstaff Arizona. 2005
- Colorado River delta Research Coordination Network. Tucson, Arizona, 2005
- Western Weeds Network – The Nature Conservancy. Laguna Beach CA. 2005
- Aridland Grazing Network - Strategies Workshop. 2001. Boise, Idaho.
- GPS/GIS End User Course. Corvallis Microtechnology. 2001. Oregon.

Aridland Grazing Network - Models Workshop. 2001. Colorado.
International Science and Stewardship Conference. 2000. Orlando, Florida.
Vegetation Monitoring Workshop. 1999. Flathead Lake, Montana.
Alliance for Information and Referral Systems. 1999. Portland, Oregon.
Northwest Alliance for Information and Referral Systems. 1995. Vancouver, British Columbia.
Alliance for Information and Referral Systems. 1996. Myrtle Beach, South Carolina.
Northwest Alliance for Information and Referral Systems. 1996. Seattle, Washington.
Northwest Regional Rural Health Conference. 1997. Spokane Washington.
Northwest Regional Primary Care Association. 1997. Portland, Oregon.
Northwest Regional Primary Care Training. 1997. Bellevue, Washington
Primary Care Symposium. 1997. Bethesda, Maryland.

MULTI-DAY FIELD TRIPS - Organized and Led:

Algodones Dunes Backpacking. 2006
Tijuana Estuary, Imperial Beach, California. 2005, 2007
Grand Canyon and Flagstaff. Arizona. 2005, 2007
Coachella Valley, California. 2005
Laguna Mountains, California. 2004, 2005, 2006, 2007
Pena Blanca, Arizona. 2004, 2005, 2006
Gray Ranch, New Mexico. 2004
Dragoon Mountains, Arizona. 2004
San Pedro River, Arizona. 2003