

## **PROFESSIONAL SUMMARY**

**Hal C. Reed, Ph.D.**

Professor, Department of Biology & Chemistry, Oral Roberts University, Tulsa, Oklahoma

**PROFESSOR OF BIOLOGY** with 34 years of experience teaching a wide variety of biology and general entomology courses.

Broadly trained entomologist and biologist with emphasis in behavior and ecology.

**MASTERS AND DOCTORATE** degrees in Entomology from Texas A & M and Washington State University, respectively.

Research experience in social insects, biological control, wetlands and stream biomonitoring and insect chemical ecology.

Forty **PUBLICATIONS** in peer-reviewed journals; 5 book chapters & 4 extension bulletins.

Presented 15 seminars at major universities and 36 presentations at scientific meetings.

**AWARDED** the Graduate Student of the Year, Pacific Branch, Entomological Society of America, 1982; and Scholar of the Year, Oral Roberts University, 1987 & 1993.

U. S. Air Force **RESEARCH FELLOW** with the Medical Entomology Function in School of Aerospace Medicine, Brooks Air Force Base, Summer 1988, working on stinging insects.

**RESEARCH ENTOMOLOGIST** with the USDA/ARS, Insect Attractants, Behavior and Basic Biology Research Laboratory (August 1988 - December 1989) working on sex and aggregation pheromones, and host plant attractants in wasps, fruit flies, and moths.

**RESEARCH ASSOCIATE** with USDA/ARS, Plant Science Research Laboratory, Stillwater, OK, working on biological control of the Russian wheat aphid (1990-1994).

**ADJUNCT FACULTY**, Entomology and Plant Pathology Department, Oklahoma State University (1992-present) teaching Biological Control and Insect Morphology.

**CO-DIRECTOR**, Nature Conservancy study of mitigated wetlands along Creek Turnpike (1993-1998).

**FACULTY**, Conservation Biology, Au Sable Institute of Environmental Studies, Michigan (1993-2007)

**CHAIR OF BIOLOGY and CHEMISTRY DEPARTMENT**, August 1, 1996-July 31, 2012

**VISITING SCIENTIST** with the USDA/ARS, Yakima Agricultural Research Insect Laboratory working on pheromones and host plant attractants in wasps, fruit flies, and moths (August 1999 – August 2000).

## RESUME

### HAL C. REED

Professor of Biology  
Department of Biology and Chemistry  
Oral Roberts University  
Tulsa, OK 74171  
(918) 495-6945, email: [hreed@oru.edu](mailto:hreed@oru.edu)

#### EDUCATION:

B.S. Summa cum laude: Oral Roberts University, Tulsa, OK, 1975  
Major: Biology Minor: Chemistry

M.S. Entomology, Texas A & M University, 1978  
Thesis: Nesting ecology of paper wasps (Hymenoptera: Vespidae: Polistes) in Texas urban area.

Ph.D. Entomology, Washington State University, 1982  
Dissertation: Biology and behavior of the forest yellowjacket, Vespula acadica (Sladen), and the obligate social parasite, Vespula austriaca (Panzer) (Hymenoptera: Vespidae).

Graduate Curriculum: 28 entomology courses; 2 ecology courses; 4 zoology courses; 2 statistics courses.

#### RESEARCH/PROFESSIONAL EXPERIENCE:

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|-------------------------|---|
| Fall 1974               | Senior research paper on chromosome numbers of <u>Polistes</u> wasps (Hymenoptera: Vespidae). Dr. John Nelson, Oral Roberts University, advisor.  |
| Fall 1975-77            | Research assistant, Urban entomology laboratory, Texas A&M Univ. Research on the biology and ecology of paper wasps, parasitoids, domestic cockroaches and oak gall wasps. Drs. G. Frankie and S. B. Vinson, project advisors.  |
| Jan. - Mar. 1976        | Field assistant, Costa Rica, Central America. Research on the role of solitary bees in the pollination biology of the lowland tropical dry forest. Dr. Frankie, project advisor.  |
| Feb. 1978-              | Research assistant, Department of Entomology, Washington State University.  |
| Jan. 1992               | Ph.D. research on social parasitism in yellowjackets. Also assisted in behavioral studies on yellowjackets, queen pheromone experiments, studies on effects of volcanic ash on yellowjacket populations, and vespine population dynamics directed by Dr. Roger D. Akre.   |
| June-Aug. 1983          | Adjunct Assistant Professor of Entomology, Oklahoma State University. Position involved collecting, identifying and curating Hymenoptera in Oklahoma. Dr. Bill Drew project advisor.  |
| May-July 1988           | U.S. Air Force Research Fellow, Medical Entomology Function, Epidemiology Division, School of Aerospace Medicine, Brooks Air Force Base, Texas. Research and consulting on stinging wasps of South Texas. Lt. Col. Dennis Pinkovsky, Ph.D., project advisor.  |
| Aug. 1988-<br>Dec. 1989 | Visiting Scientist and Research Entomologist, Insect Attractants, Behavior and Basic Biology Research Laboratory, USDA/ARS, Gainesville, Florida. Studies on mating biology and alarm and sex pheromones of social wasps, male moth pheromones, and host plant attraction in papaya fruit flies. Dr. Peter Landolt, project leader. |
| May-Aug.                | Research Associate, Plant Science and Water Conservation Laboratory USDA/ARS, Stillwater,   |

- 1990-1994 Oklahoma. Biological control projects on biology and chemical communication of aphid parasitoids. Dr. Norm Elliott, project leader.
- 1992-present Adjunct Graduate Faculty, Entomology Department, Oklahoma State University.
- Aug. 1999 Visiting Scientist, Yakima Agricultural Research Laboratory, Washington State. Insect chemical  
–Aug 2000 ecology projects on wasps, moths and flies. Dr. Peter Landolt, project leader.

#### RESEARCH INTERESTS:

- (1) insect chemical ecology; specifically sex and aggregation pheromones, host plant infochemicals
- (2) social wasps and other social insects
- (3) biological control
- (4) biomonitoring of wetlands and streams
- (5) urban entomology
- (6) medical entomology & parasitology, specifically insect vectors of disease & insect venom allergy
- (7) integrated pest management in developing countries
- (8) conservation biology & environmental stewardship

#### TEACHING EXPERIENCE:

- Spring 1980 Insect Behavior. Four lectures presented under the direction of Dr. Roger D. Akre.
- Fall 1980 Teaching assistant in laboratory session of Medical Entomology under the direction of Dr. Paul Catts. Responsible for the laboratory session of General Entomology taught by Dr. Roger Akre.
- Fall 1981 Instructor of General Entomology, Washington State University.
- Fall 1982 Assistant Professor of Biology (1982-86), Associate Professor (1986-1996) and Professor --present (1996- present), Department Chair (1996-2012) Oral Roberts University.
- Teaching responsibilities: Introductory Biology lecture and honors lab, nonmajors Biology, Ecology, General Entomology, Developmental Biology, Bioethics, Parasitology, Introduction to Research, Environmental Science, Global Issues Seminar, Pre-Health Professions seminar, Senior Research; Guest lecturer in Philosophy of Science and Ecology.
- Other Duties: academic advisor for 25-30 students/year, guidance of student research projects, co-advisor of AED pre-med honors society and ORU pre-health professions program
- 1984-1991 Part-time instructor, Tulsa Junior College: Human Anatomy and Physiology, General Biology and General Zoology.
- Summer 1993 Professor & Director of Undergraduate Research Program, Au Sable Institute of Environmental  
-2007 Studies; Mancelona, MI. Courses taught: Insect Biology and Ecology; Animal Ecology; Land Resources; Research Methods; Conservation Biology
- Fall 1995 Adjunct Professor of Biological Control (graduate course), Department of Entomology, Oklahoma State University, Stillwater, OK. Dr. Russ Wright, Department chair.
- Fall 2007 Adjunct Professor, Insect Morphology (graduate course), Dept. of Entomology and Plant  
Spring 2015 Pathology, Oklahoma State University, Dr. Phil Mulder, Dept. Head

## PROFESSIONAL AFFILIATIONS:

Entomological Society of America  
 International Union for the Study of Social Insects  
 TriBeta Society (Biological Sciences Honor Society)  
 Oklahoma Academy of Sciences  
 American Scientific Affiliation  
 American Association for the Advancement of Science  
 National Association of Advisors of Health Professions

## GRANTS/AWARDS:

1980	Travel Grant, WSU Graduate School
1980	Sigma Xi Grant-in-aid of Research
1981	Finalist: Sigma Xi (WSU Chapter) Competitive Student Research Presentation
1982	Outstanding Graduate Student of the Pacific Branch of the Entomological Society of America
1983	ORU intramural grant: "Distribution of Social Wasps in Oklahoma."
1987 & 1993	Scholar of the Year, Oral Roberts University
1993-1997	Co-director, Creek Turnpike Wetlands Project Oklahoma Nature Conservancy. 5 year project to monitor aquatic plant and macroinvertebrates in mitigated wetland sites. (\$15,000 per year)
1998-99	ORU intramural grant: "Chemical baits for stinging wasps of Oklahoma."
1999-2000	Principle investigator. Development and assessment of an optimized lure and trap system for female moths. (\$57,000) USDA/ARS Research Career Enhancement program.
2000-2001	Principle investigator. Trapping social wasps in the Galapagos Islands and Neotropics. National Geographic Society. (\$5,120)
2013-2016	Co-investigator. Science and the Wisdom of God: An Interdisciplinary Project to Help Christians Gain an Appreciation for the Ingenuity Behind our Evolving Universe. Biologos Foundation. Translational project to Christian churches and groups. (\$159,000).
2016-2017	ORU President HEAR initiative grant: A vegetative assessment of the mitigated Creek Nation Turnpike wetlands. (\$1200).

## GRANTS SUBMITTED

1996	Co-investigator. Controls of water quality in portions of the Arkansas River Basin. EPA proposal.
1996, 1999	Contributor. Undergraduate biological sciences education program. Howard Hughes Medical Institute.
1996-97	Principal investigator. Host cues important to codling moth host finding and oviposition. USDA/ARS Research Career Enhancement program.

- 2001 Principle Investigator. Biomonitoring of two mitigated wetlands in south Tulsa. Oklahoma Turnpike Authority. \$15,000.
- 2002 Principle Investigator. Repellency of ants by natural products for potential use in small subsistence farm plots. E.C.H.O. and Gordon College collaborative project Using Science to Help the Poor.
- 2005 Principle Investigator. Fulbright grant for cooperative research sabbatical in Argentina.
- 2009 Principle Investigator. Academic Research Infrastructure Program: Recovery and Reinvestment (ARI-R<sup>2</sup>) grants for equipment and lab renovation
- 2009 Co-Principle Investigator. National Genomics Research Initiative in Phage. Howards Hughes Medical Institute.

#### PRESENTATION AT SCIENTIFIC MEETINGS:

- 1977 Entomological Society of America, Washington, DC, "Nesting ecology of Polistes wasps in a Texas urban area."
- 1979 Entomological Society of America, Denver, "Behavior of the yellowjacket social parasite, Vespula austriaca."
- 1980 Washington State Entomological Society, Seattle, "Usurpation behavior of the yellowjacket social parasite, V. austriaca."
- 1982 International Union for the Study of Social Insects, International Congress, Boulder, Colorado, "Divergent strategies of colony usurpation among two obligate vespine parasites (Hymenoptera: Vespinae)."
- 1984 Entomological Society of America, Southwestern Branch, "Distribution of social wasps (Hymenoptera: Vespidae) in Oklahoma."
- 1985 Oklahoma Academy of Sciences, "Enhancing chemically-baited yellowjacket traps with color."
- Feb. 1988 Entomological Society of America, Southwestern Branch, Dallas, "Evidence for an alarm pheromone in the eastern yellowjacket, Vespula maculifrons."
- Mar. 1989 Central States (Kansas) Entomological Society, Annual Meeting, Stillwater, Oklahoma, "A long term alarm pheromone response in the southern yellowjacket, Vespula squamosa."
- Dec. 1989 Co-organizer and co-moderator of IUSSI/ESA Section C symposium, "Mating Strategies and Mating Biology of Social Insects," Entomological Society of America, San Antonio, Texas.
- Dec. 1989 Entomological Society of America, San Antonio, Texas, "The role of pheromones in the swarming of paper wasp sexuals (Vespidae: Polistes)."
- Aug. 1990 International Congress of the International Union for the Study of Social Insects, Bangalore, India, "Evolution of social parasitism in yellowjackets and hornets (Hymenoptera: "Vespidae)."

- Nov. 1990 Oklahoma Academy of Sciences, Tulsa, OK, "The swarming of paper wasp sexuals at towers."
- Dec. 1991 Entomological Society of America, Reno, Nevada, "Biological attributes of Diaeretiella rapae (Hymenoptera: Aphidiidae), a parasitoid of the Russian wheat aphid" (poster).
- Jan. 1992 Fifth Annual Conference on the Russian Wheat Aphid, Ft. Worth, Texas. Comparative life table statistics of Diaeretiella rapae and Aphidius matricariae on the Russian wheat aphid.
- Feb. 1992 Southwestern Branch of the Entomological Society of America, Tulsa, OK. The role of experience in the chemorIENTATION of Diaeretiella rapae to the Russian wheat aphid/wheat complex.
- Dec. 1993 Entomological Society of America, Indianapolis. Evidence for a sex attractant in the aphid parasitoid, Aphidius colemani, with potential use in field studies.
- Dec. 1994 Entomological Society of America, Dallas, TX Olfactory responses of the parasitoid, Diaeretiella rapae to two plant-aphid complexes (display poster).
- Nov. 1996 Oklahoma Academy of Sciences, Technical meeting, Oklahoma City. Use of vegetative surveys in monitoring the development of mitigated wetlands.
- May 1997 Medical importance of stinging ants, bees and wasps (Insecta: Hymenoptera); University of Oklahoma Health Sciences Research Day; Tulsa, OK; poster session
- Nov. 1997 Oklahoma Academy of Sciences, 86<sup>th</sup> annual technical meeting, . "Mitigated wetlands near the Creek Turnpike: success or failure?", Univ. of Science & Arts of Oklahoma
- April 1998 Team Wetlands national conference, "Biomonitoring in mitigated wetlands—natural successions along the Creek Nation Turnpike" , Washington, D. C..
- Nov. 2000 An unusual case of polygyny in a northern temperate yellowjacket species (Hymenoptera: Vespidae: *Vespula*), Biological Sciences section of the annual meeting of the Oklahoma Academy of Sciences, Oral Roberts University, Tulsa, OK
- Dec. 2000 Flight responses of female codling moths (*Cydia pomonella* L.; Lepidoptera: Tortricidae) in a wind tunnel. Annual Meeting of Entomological Society of America, Montreal, Canada
- Nov. 2001 Invasive social wasps of the Galapagos Islands. Technical meeting. Oklahoma Academy of Sciences. Cameron University, Lawton, OK.
- Dec. 2001 The behavioral ecology of invasive Vespidae: What makes them invasive? By P. Landolt and H. Reed (co-author). Annual Meeting of Entomological Society of America, San Diego, CA.
- Nov. 2002 Field testing of candidate chemical attractants for social wasps (Hymenoptera: Vespidae) by Hal C. Reed (presenter) and Peter Landolt. Annual Meeting of Entomological Society of America, Ft. Lauderdale, FL.
- Nov. 2002 Co-organizer of symposium Behavioral modification: a critical component of social insect IPM. Annual Meeting of Entomological Society of America, Ft. Lauderdale, FL.

- Nov. 2002      Development of chemical attractants and baits for controlling social wasps. Symposium address. By Peter Landolt and Hal Reed (presenter). Annual Meeting of Entomological Society of America, Ft. Lauderdale, FL.
- Oct. 2004      Status of the threatened plants: Lake Huron Tansy and Pitcher's thistle at the Antrim Creek Natural Area" to the Antrim County, Michigan Planning Commission.
- Nov. 2004      Population Studies of the Rare and Threatened Plants, the Pitcher's Thistle (*Cirsium pitcheri*) and the Lake Huron Tansy (*Tanacetum huronense*) in a Great Lakes Dune Ecosystem. Oklahoma Academy of Sciences, Biological Sciences – Botany section
- Aug 2006      Chemical ecology of social wasps: current status and future trends in the symposium on Social Insect Semiochemicals and was part of the XVth International Congress of the International Union for the Study of Social Insects, held in Washington, D.C. July 30<sup>th</sup> through August 4<sup>th</sup>, 2006.
- Dec 2007      Pheromones of paper wasps (Polistes) and yellowjackets (Vespinae): current status and future trends in the symposium titled "Connecting the Colony – Building Social Complexity through Pheromones" at the Entomological Society of America held in San Diego, CA on Dec. 9-12, 2007.
- Nov. 2008      Foraging attractants of yellowjackets (Hymenoptera: Vespidae: Vespinae) in the symposium on Insect Attractants at annual meeting of the Entomological Society of America held in Reno, NV.
- Nov 2012      Mitigated Creek Turnpike Wetlands 20 years later: Success or Succession? Symposium on Innovations in Water Conservation, Efficiency and Reuse at the 33<sup>rd</sup> Annual Governor's Water Conference and 10<sup>th</sup> Annual OWRRI Water Resources Symposium. Tulsa, OK
- Nov. 2014      Swarming of *Polistes* paper wasp (Hymenoptera: Vespidae) sexuals atop tall structures. Oklahoma Academy of Sciences Technical Meeting. Broken Arrow, OK
- Feb 2015      Hilltopping and territorial behavior of *Polistes* paper wasp (Hymenoptera: Vespidae) sexuals atop tall buildings. Southwestern Branch Regional Meeting, Entomological Society of America. Tulsa, OK

#### SEMINARS:

- "Social parasitism in yellowjacket wasps," Entomology Dept., Clemson University, SC, July, 1984.
- "Nesting biology and behavior of social wasps," Entomology Dept., Oklahoma State Univ., October, 1984.
- "Major hypotheses in the evolution of social behavior in insects," Department of Entomology, Oklahoma State University, October 12, 1984.
- "Biology and behavior of social wasps," University of Chiang Mai, Northern Thailand, June 1987.
- "Stinging wasps of South Texas," Epidemiology Division, School of Aerospace Medicine, Brooks Air Force Base, June 1988; and Allergy Clinic, Wilford Hall, USAF Medical Center, Lackland Air Force Base, July 1988.

"Mating strategies of paper wasps," Department of Entomology, University of Florida, October 25, 1989.

"A tall tale of wasp mating swarms," Entomology Dept., Univ. California-Riverside, April 18, 1990.

"A tall tale of paper wasp mating swarms" Entomology Dept., Oklahoma State University, October 1991.

"O wasp where is thy sting?" Regional convention of TriBeta Biological Honor Society, Oklahoma Biological Station, (April 1994) and Oklahoma Academy of Sciences field meeting (October 1994.)

"Stinging Hymenoptera: Biology and Medical Importance" at the College of Osteopathic Medicine, Oklahoma State University, Tulsa, March 19, 1996.

"Venomous Hymenoptera: Is the Sting the Thing?" USDA/ARS, Yakima Agricultural Research Laboratory, January 25, 2000.

"Development of attractants for native and invasive social wasps: examples from Oklahoma and the Galapagos islands." Department of Entomology and Plant Pathology, Oklahoma State University, Stillwater, OK. Nov. 14, 2001.

"Chemical ecology of yellowjackets (Hymenoptera: Vespidae: Vespinae): current status and future trends" Department of Entomology and Plant Pathology, Oklahoma State University, Stillwater, OK. January 12, 2005.

"Medical aspects of stinging Hymenoptera" Department of Entomology and Plant Pathology, Oklahoma State University, Stillwater, OK. January 2009, September 2015

"The Sting is the Thing: Social Wasp Communication" Department of Natural Sciences, Southern Nazarene University, Bethany, OK. Oct. 3, 2014

"Undergraduate Research Proposals" Department of Natural Sciences, Southern Nazarene University, Bethany, OK. Oct. 3, 2014.

"A Tall Tale of Paper Wasp Mating Swarms" Department of Entomology and Plant Pathology, Oklahoma State University, Stillwater, OK, Oct. 28, 2015.

#### NON-TECHNICAL AND MEDIA PRESENTATIONS

"Healing the Land" guest on KCFO-AM radio show Our Kitchen Table, Tulsa, January 6, 1996.

"Stewardship of clean water" Family Magazine television program (March 2, 1998), Channel 47

"Oklahoma Scientists, Christians, Urge Congress To Act On Climate Change" Tulsa Channel 6 news Interview, July 22, 2013, <http://www.newson6.com/story/22904590/oklahoma-evangelical-christian-scientists-urge-congress-to-act-on-climate-change>

Biologos grant presentation: "How to think about the evolution-creation controversy" Church of the Holy Spirit Anglican. Tulsa, OK. August 9, 2013.

Biologos grant presentations: "How to approach the creation/evolution controversy" and "Fundamentals of biology as it relates to the theory of evolution" Tulsa Pastors Workshop on Science and Faith, Oral Roberts University, January 3, 2014.



Biologos grant presentations: "God, creation, and biology through the eyes of faith" (Sept 24, 2014) and "Macroevolution and how to think about evolution" (Oct. 1, 2014). Christian Chapel church, Tulsa, OK

Social Insects lecture as part of the GREENBELT MERIDIAN conservation project by artists James and Yiren Gallagher at the Hardesty Art Center, Downtown Tulsa, OK, August 27, 2015.

#### DIRECTED UNDERGRADUATE RESEARCH STUDENT PRESENTATIONS (LAST 9 YEARS):

Jarrell, Jared. 2016. Mitigated Creek Turnpike wetlands: success or succession? A comparison of vegetative surveys from 1992-1997, 2011-12, and 2016. Annual meeting of the Oklahoma Academy of Sciences, Nov. 2016 and TriBeta Biological Honors Society Regional meeting, April 2017.

Cardenas, R. 2014. Abundance and diversity of macroinvertebrates in Fred Creek, Tulsa, OK (poster). TriBeta Biological Honors Society Regional meeting, University of Oklahoma Field Station, April 2014.

Pandian, J. 2012. Swarming of Paper Wasp (Hymenoptera: Vespidae: *Polistes*) Sexualls Atop Tall Buildings in Oklahoma. (poster)., TriBeta Biological Honors Society Regional meeting, University of Oklahoma Field Station, April 2012.

Sweeney, A. 2012. The Creek Turnpike wetlands: a comparison of vegetative surveys from 1992-1997 and 2011. Great Plains Honors Council, Kansas City, April 2012; and West Coast Biological Science Undergraduate Research Conference at Loyola University, April 21, 2011.

Knier, S. 2010. Field Testing of the Efficacy of Natural and Synthetic Attractants for Foraging Yellowjackets (Hymenoptera: Vespidae). TriBeta Biological Honors Society Regional meeting, University of Oklahoma Field Station, April 2010 (poster); and Annual meetings of the Oklahoma Academy of Sciences, Nov. 2009 and 2008 (oral).

Kisseih, E. 2007. An Analysis of the Aquatic Macroinvertebrate Community and Water Quality of Fred Creek. Annual meeting of the Oklahoma Academy of Sciences, Nov.2007; and Oklahoma Cleans Lakes and Watershed Association in Tulsa April 9-11, 2008.

Iyanam, U. 2007. Population Studies of the Threatened Plant, *Cirsium pitcheri*, at the Antrim Creek Natural Area, Michigan. Annual meeting of the Oklahoma Academy of Sciences, Nov. 2007.

#### WORKSHOPS:

Co-leader of insect pest management workshops for agricultural missionaries, 2nd annual Agricultural Missions Conference, Ft. Meyers, FL, Oct. 30-Nov. 2, 1995.

#### CONSULTING:

Hollister-Stier Pharmaceutical Co., Spokane, WA, 1986  
Educational Concerns for Hunger Organization (ECHO), N. Fort Myers, FL.  
Oklahoma Biodiversity Council.  
Academic Council, Au Sable Institute of Environmental Studies, (1996-present)

#### REVIEWER FOR:

Outdoor Oklahoma  
American Midland Naturalist  
Annals of the Entomological Society of America  
- Proceedings Oklahoma Academy of Science  
Kansas Entomological Society

Insectes Sociaux  
 William C. Brown Publ. (Laboratory Anatomy of the Fetal Pig)  
 The Science of Entomology textbook (Romoser)  
 Environmental Entomology  
 Ethology, Ecology and Evolution  
 Behavioral Ecology and Sociobiology  
 Journal of Chemical Ecology

#### PUBLICATIONS:

1. Frankie, G. W., D. L. Morgan, M. J. Gaylor, J. G. Benskin, W. E. Clark, H. C. Reed and P. J. Hamman. 1977. The mealy oak gall on ornamental live oak in Texas. Texas Agr. Exp. Sta. Bull. MP-1315. 12p.
2. Reed, H. C. and S. B. Vinson. 1979. Observations of the life history and behavior of Elasmus polistis Burks (Hymenoptera: Elasmidae). J. Kansas Ent. Soc. 52:247-257.
3. Reed, H. C. and S. B. Vinson. 1979. Nesting ecology of paper wasps (Polistes) in a Texas urban area (Hymenoptera: Vespidae). J. Kansas Ent. Soc. 52:673-89.
4. Reed, H. C., R. D. Akre and W. B. Garnett. 1979. A North American host of the yellowjacket social parasite, Vespula austriaca (Panzer) (Hymenoptera: Vespidae). Ent. News 90:110-113.
5. Carmean, D., R. D. Akre, R. S. Zack and H. C. Reed. 1981. Notes on the yellowjacket parasite, Bareogonalis canadensis (Hymenoptera: Trigonalidae). Ent. News 92:23-26.
6. Akre, R. D. and H. C. Reed. 1981. A polygynous colony of Vespula pensylvanica (Saussure) (Hymenoptera: Vespidae). Ent. News 92:27-31.
7. Akre, R. D. and H. C. Reed. 1981. Population cycles of yellowjackets in the Pacific Northwest (Hymenoptera: Vespidae). Environ. Ent. Forum 10:267-274.
8. Hung, A. C. F., H. C. Reed and S. B. Vinson. 1981. Chromosomes of four species of Polistes wasps (Hymenoptera: Vespidae). Carylogia 24:225-230.
9. Akre, R. D., L. D. Hansen, H. C. Reed and L. Corpus. 1981. Effects of ash from Mt. St. Helens on ants and yellowjackets. Melanderia 37:1-19.
10. Akre, R. D., H. C. Reed and P. J. Landolt. 1982. Nesting biology and behavior of the blackjacket, Vespula consobrina (Hymenoptera: Vespidae). J. Kansas Ent. Soc. 55:373-405.
11. Reed, H. C. and R. D. Akre. 1982. Morphological comparisons between the obligate social parasite, Vespula austriaca (Panzer) and the host, Vespula acadica (Sladen) (Hymenoptera: Vespidae). Psyche 89:183-195.
12. Akre, R. D. and H. C. Reed. 1983. Evidence for a queen pheromone in Vespula. Can. Ent. 115:371-377.
13. Reed, H. C. and R. D. Akre. 1983. Colony behavior of the obligate social parasite, Vespula austriaca (Hymenoptera: Vespidae). Insectes Sociaux 30:259-273.
14. Reed, H. C. and R. D. Akre. 1983. Nesting biology of the forest yellowjacket, Vespula acadica (Sladen) (Hymenoptera: Vespidae). Ann. Ent. Soc. Amer. 76:582-590.

15. Reed, H. C. and R. D. Akre. 1983. Comparative colony behavior of the forest yellowjacket, Vespula acadica (Sladen) (Hymenoptera: Vespidae). J. Kansas Ent. Soc. 56:581-606.
16. Reed, H. C. and R. D. Akre. 1983. Usurpation behavior of the yellowjacket social parasite, Vespula austriaca (Panzer) (Hymenoptera: Vespidae). Amer. Midl. Naturalist. 110: 419-432.
17. Schmidt, J. O., H. C. Reed and R. D. Akre. 1984. Venom of Vespula austriaca (Panzer), a parasitic yellowjacket (Hymenoptera: Vespidae). J. Kansas Ent. Soc. 57:316-322.
18. Akre, R. D. and H. C. Reed. 1984. The biology and distribution of social Hymenoptera. Chapt. 1 in Vol. 2, Insect Poisons, Allergens, and other Invertebrate Venoms) In A. Tu (ed.) Encyclopedia Handbooks of Natural Toxins. Vols.1-5 Marcel Dekker: NY .
19. Akre, R. D. and H. C. Reed. 1984. Vespine Defense. In Hermann, H. R. (ed.) Defensive Mechanisms of the Social Insecta. Praeger: New York (pp. 59-94).
20. Reed, H. C. and J. Nelson. 1985. Distribution of social wasps (Hymenoptera: Vespidae) in Oklahoma. Southwest. Ent. 10:95-102.
21. Reed, H. C., J. Gallego and J. Nelson. 1988. Morphological evidence for polygyny in postemergence colonies of the red paper wasp, Polistes perplexus Cresson (Hymenoptera:Vespidae). J. Kansas Ent. Soc. 61:453-63.
22. Reed, H. C. and P. J. Landolt. 1990. Sex attraction in the paper wasp, Polistes exclamans Viereck (Hymenoptera: Vespidae) in a wind tunnel. J. Chem Ecol. 16:1277-87.
23. Landolt, P. J. and H. C. Reed. 1990. Behavior of the papaya fruit fly (Diptera: Tephritidae): host finding and oviposition. Environ. Entomol. 19: 1305-1310.
24. Pinkston, K., H. C. Reed and R. Wright. 1990. Stinging bees and wasps. Oklahoma State University Extension Bulletin. 6p.
25. Reed, H. C. and R. D. Akre. 1990. Evolution of social parasitism in yellowjackets and hornets (Hymenoptera: Vespidae: Vespinae). pp. 160-161 IN Vereesh, G. K. et. al. (eds) Social Insects and the Environment. Proc. 11th Inter. Congr. I.U.S.S.I. Bangalore, India.
26. Reed, H. C. and P. J. Landolt. 1990. Queens of the southern yellowjacket, Vespula squamosa (Drury), produce sex attractant (Hymenoptera: Vespidae). Florida Entomol. 73: 687-689.
27. Reed, H.C. and P. J. Landolt. 1991. Swarming of paper wasp sexuals at towers in Florida. Ann. Entomol. Soc. Amer. 84:628-635.
28. Landolt, P. J., H. C. Reed, and R. R. Heath. 1992. Attraction of female papaya fruit fly (Diptera: Tephritidae) to male pheromone and host fruit. Environ. Entomol. 21:1154-1159.
29. Reed, H. C. and P. J. Landolt. 1992. Introduction to Symposium on Mating Biology and Mating Strategies in Social Insects. J. Kansas Entomol. Soc. 65: 209-210.
30. Reed, H. C., D. K. Reed, and N. C. Elliott. 1992. Comparative life table statistics of Diaeretiella rapae and Aphidius matricariae (Hymenoptera: Aphidiidae) on Russian wheat aphid in the laboratory. Southwestern Entomol. 17: 307-312.

31. Reed, H. C., S. Tan, D. K. Reed, N.C. Elliott, J.D. Burd, and T. Walker. 1994. Evidence for a sex attractant in Aphidius colemani Viereck (Hymenoptera: Aphidiidae), with potential use in field studies. S.W. Entomol. 19: 273-278.
32. Reed, H.C., S.H. Tan, K. Haapanen, M. Killmon, D. K. Reed, and N.C. Elliott. 1995. Olfactory responses of the parasitoid Diaeretiella rapae (Hymenoptera: Aphidiidae) to the odor of plants, aphids, and aphid-plant complexes. J. Chem. Ecol. 21: 407-418.
33. Landolt, P. J., R. R. Heath, H. C. Reed and K. Manning. 1995. Pheromonal mediation of alarm in the eastern yellowjacket, Vespula maculifrons (Buysson) (Hymenoptera: Vespidae). Fla. Entomol. 78: 101-108.
34. Reed, H. C., K. Pinkston and R. Wright. 1995. Paper wasps, yellowjackets and other stinging wasps. Oklahoma Extension Facts. F-7305. 6 p.
35. Wright, R., P. Mulder, K. Pinkston, and H. Reed. 1996. Honey bees, Bumble bees, Carpenter bees, and Sweat bees. OSU Extension Facts F-7317.
36. Landolt, P.J., R.L. Jeanne and H.C. Reed. 1998. Chemical communication in Social Wasps. Chap. 9 In Vandermeer, R. (ed.). Pheromone Communication in Social Insects—ants, wasps, bees, and termites. Westview Press.
37. Landolt, P. J. H. C. Reed, and R. R. Heath. 1999. An alarm pheromone from the heads of worker southern yellowjackets, *Vespula squamosa* (Drury) (Hymenoptera: Vespidae). Florida. Entomol. (Scientific Notes). 82: 356-359.
38. Landolt, P.J., H. C. Reed, J.R. Aldrich, A.L. Antonelli, and C. Dickey. 1999. Social wasps (Hymenoptera: Vespidae) trapped with acetic acid and isobutanol. Florida Entomol. 82: 609-614.
39. Reed, H. C. and P. J. Landolt. 2000. Application of alarm pheromone to targets to southern yellowjackets, *Vespula squamosa* Drury (Hymenoptera: Vespidae). Florida Entomol. 83: 193-196.
40. Landolt, P.J., C. S. Smithhisler, H. C. Reed and L. McDonough. 2000. Trapping social wasps (Hymenoptera: Vespidae) with acetic acid and saturated short chain alcohols. J. Econ. Entomol. 93: 1613-1618.
41. Landolt, P. J., T. Adams, H. C. Reed and R. Zack. 2001. Trapping alfalfa loopers *Autographa californica* with single and double component floral lures. Journal of Economic Entomology 30: 667-672.
42. Reed, H. C. and P. J. Landolt. 2002. Attraction of mated female codling moths to infested apples in a wind tunnel bioassay. Florida Entomol. 85: 324-329.
43. Akre, R. D. and H. C. Reed. 2002. Ants, Bees, and Wasps. Chapter 19 IN: Mullen, G. and L. Durden (eds.) Medical and Veterinary Entomology. Academic Press.
44. Reed, H. C. and P. J. Landolt. 2002. Trap response of Michigan social wasps to the candidate feeding attractants acetic acid, isobutanol and heptyl butyrate. Great Lakes Entomologist 35: 71-77.
45. Landolt, P.J., H.C. Reed and Dalton Ellis. 2003. Trapping yellowjackets (Hymenoptera: Vespidae) with heptyl butyrate emitted from controlled-release dispensers. Florida Entomol. 86: 323-328
46. Reed, H. C. and P. J. Landolt. 2006. Late season polygynous *Vespula pensylvanica* (Hymenoptera : Vespidae) colonies in a northern temperate area. Pan. Pacific Entomol. 81: 164-170.

47. Reed, H.C. and Landolt, P.J. 2009. Ants, Bees, and Wasps. Chapter 19 IN: Mullen, G. and L. Durden (eds.) Medical and Veterinary Entomology. Academic Press.
48. Landolt, P.J., H.Reed, KR Landolt, JM Sierra, R Zack. 2009. Southern yellowjacket *Vespula squamosa* Drury in Guatemala, Central America. Proc. N.Y. Entomol. Soc. 111:426-432.
49. Landolt, P.J., D. H. Cha, C. T. Werle, J. J. Adamczyk, R. L. Meagher, R. L. Gilbride, T. S. Clpper, **H. C. Reed**, P. E. A. Teal and B. J. Sampson. 2014. *Polistes spp.* (Hymenoptera: Vespidae) orientation to wine and vinegar. Florida Entomologist 97: 1620-1630.

#### IN PREPARATION:

50. Reed, H.C. and Landolt, P.J. 2017. Ants, Wasps, and Bees. Chapter 21 IN: Mullen, G. and L. Durden (eds.) Medical and Veterinary Entomology. Academic Press. 3<sup>rd</sup> edition.
51. Reed, H.C. and Thurman, D.T. How to Think about Evolution. 160 p. (seeking publisher)
52. Sweeney, A., Jarrell, J and H. C. Reed. Mitigated Creek Turnpike wetlands 20 years later: success or succession? Proceeding of Oklahoma Academy of Sciences. (manuscript in preparation)

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