

JAMES CRAIG ZECH
Professor
Sul Ross State University
C-57, Department of Biology, Geology, and Physical Science
Sul Ross State University, Alpine, TX 79832
432-837-8114
izech@sulross.edu

Last Updated: October 2016

EDUCATION

Ph.D. - The Ohio State University, Plant Biology, Systematics, 1992; M.S. - Central Michigan University, Botany, 1986; B.S. - Central Michigan University, Biology and Psychology, 1983; A.A. - Grand Rapids Junior College, Biology and Psychology, 1981.

PROFESSIONAL EXPERIENCE

Sul Ross State University: 1992 – present.
Midland College
San Antonio College
Ohio Technical College: 1991.
The Ohio State University: 1989 – 1991.
Harvard University: 1988
Central Michigan University: 1984 – 1986.

PROFESSIONAL ASSOCIATIONS

American Institute of Biological Sciences, 2002 - present.
American Society of Plant Taxonomists, 1987 - present.
Beta Beta Beta (Honorary biology fraternity), 1983 - present.
Botanical Research Institute of Texas, 1998 - present.
Botanical Society of America, 1988 - present.
California Botanical Society, 1992-2000.
Chihuahuan Desert Research Institute Board of Scientists, 1997-2000.
Davis Mountain Environmental Education Center Board of Trustees, 1997-2001.
Vice President, 1998 -2001.
President, 2001.
Volunteer, 2001 - present.
International Association of Plant Taxonomists, 1987 - present.
Michigan Botanical Club, 1986-1993.
National Audubon Society, 1984-1990.
Nature Conservancy of Texas, 1999 - present.
Education and Leadership Development Committee, 1999-2001.
The Ohio Academy of Science, 1987-1990.
The Society for the Study of Evolution, 1990 - present.
Texas Academy of Science, 1996 - 2012.
Vice President of the Systematics Section, 1998-1999.

HONORS, AWARDS, AND LISTING

Who's Who Among America's Teachers, 9th Edition, April 2005, nominated by Taryn Watson. International Scientist of the Year 2002, nominee, International Biographical Centre, Cambridge, England.

Who's Who Among America's Teachers, 7th Edition, March 2002, nominated by Sandra I. Castorena.

Who's Who Among America's Teachers, 4th Edition, October 1996, nominated by Homer E. Puckett.

Best Paper Presented by a Graduate Student, 90th Annual Meeting of the Michigan Academy of Science, Arts, and Letters, Botany Section, 1986.

Partial Tuition Scholarship at Central Michigan University Biological Station, 1985. \$100.00
Michigan Garden Club Scholarship, 1982-1983. \$300.00

PUBLICATIONS

Abstracts Published

Rousselow, J. S. and J. C. Zech. 2011. Spring Baseline Floral Inventory of Hancock Hill, Brewster County, Texas. *Texas Acad. Sci.* 114: 53.

Zech, J. C. 2010. An Introduction to the Aspens of Texas: The Rarest of the All? Texas Plant Conservation Conference, Lady Bird Johnson Wildflower Center, Austin, TX).

Mancha, V.A. and J. C. Zech. 2010. Coal Ball Analysis: Variations in the Peel Technique. Abstract. *Texas Acad. Sci* 113: 105 (Poster).

Roberts, P. and J. C. Zech. 2010. The Vascular Plants of Indian Springs and Cienega of Chinati Mountains State Natural Area, Presidio County, Texas, Based on Sampling from Late February 2009 Through April 2009. *Texas Acad. Sci.* 113: 106 (Poster).

Zech, J. C. 2008. *Zanthoxylum parvum* (Rutaceae): A Rare West Texas Endemic, Safe at Last? Abstract. *Texas Acad. Sci.* 111: 51.

Zech, J. C. 2004. Botanical Zoo: Three Rare Species from Far West Texas (*Zanthoxylum parvum*, *Osmorhiza bipatriata*, and *Ophioglossum polyphyllum*). Within Texas Plant Conservation Conference Program, pp. 16, Abstract. Lady Bird Johnson Wildflower Center, Austin, TX.

Livingston, R. A., P. A. Schlichting, S. J. Carlson, P. R. Manning, and J. C. Zech. 2004. Beyond the Fence Line: Distribution of *Ophioglossum polyphyllum* within West Texas. Abstract. *Texas Acad. Sci.* 107: 84.

Zech, J. C., L. K. Hedges, S. J. Carlson. 2000. The Reproductive Biology of a West Texas Endemic, *Zanthoxylum parvum* (Rutaceae). Third Southwestern Rare and Endangered Plant Conference, Northern Arizona University. 3: 27.

Baur, J. L. and J. C. Zech. 2000. Development of an Educational Garden Representing Different Vegetative Zones Within the Chihuahuan Desert Region of Texas. Abstract. *Texas Acad. Sci.* 103: 76.

Carlson, S. J., J. C. Zech, and L. K. Hedges. 2000. The Missing Piece: Fruit Morphology of *Zanthoxylum parvum* (Rutaceae), A West Texas Endemic. Abstract. *Texas Acad. Sci.* 103: 53.

Hedges, L. K. and J. C. Zech. 1999. Floral Morphology of *Zanthoxylum parvum* Shinnery (Rutaceae), a Davis Mountains Endemic. Abstract. 5th Symposium on Resources of the Chihuahuan Desert. 5: 23.

Zech, J. C., P. R. Manning, S. J. Hood, and W. H. Wagner, Jr. 1999. A New Fern and a Female Found: Botanical News from West Texas. Abstract. *Texas Acad. Sci.* 102: 81.

Zech, J. C. and L. K. Hedges. 1998. The Staminate Flowers of a West Texas Endemic

- (*Zanthoxylum parvum*, Rutaceae): Evidence of Polyploidy? Abstract. Texas Acad. Sci. 101: 43.
- Zech, J. C. and E. D. Herzog. 1997. Vascular Plants of Nations Ranch, Jeff Davis County, Texas. Abstract. Texas Acad. Sci. 100: 45.
- Zech, J. C. and T. O. Hernández. 1996. Flavonoid Compound Chemistry and Hybridization in Trans-Pecos Oaks (*Quercus* sp., Fagaceae). Abstract. Texas Acad. Sci. 99: 17.
- Papers/Manuals/Photographs Published:
- Zech, J. C. and A. M. Powell. 2016. Discover the Chihuahuan Desert: General Botany. A Laboratory Manual For Biology 1311. 3rd Edition. Sul Ross State University, Alpine, Texas.
- Zech, J. C. 2013. Making Opportunity Affordable in Texas: A Student-Centered Approach. Tuning of Biology: Evolution. Texas Higher Education Coordinating Board, Lumina Foundation for Education.
- Zech, J. C., Editor. 2013. Making Opportunity Affordable in Texas: A Student-Centered Approach. Tuning of Biology. Texas Higher Education Coordinating Board, Lumina Foundation for Education.
- Worrall, J.J., G.E. Rehfeldt, A. Hamann, E.H. Hogg, S.B. Marchetti, M. Michaelian, and L.K. Gray. 2013. Recent declines of *Populus tremuloides* in North America linked to climate. Forest Ecology and Management 299: 35-51 (contributed presence/absence data).
- Clary, K. 2013. Floral Fact: Trembling for Survival: Ancient Root Systems, Unique Leaf Structure Give Aspens Longevity. Texas Parks and Wildlife Magazine, October Issue (contributed Aspen information).
- Zech, J. C., T. Clarke, S. Hileman, J. Parsons, and B. Six. 2012. Thesis Guidelines College of Arts and Sciences, 2nd Edition. Sul Ross State University, Alpine, TX.
- Zech, J. C., C. Fairlie, S. Hileman, J. Parsons, and B. Six. 2009. Addendum to the Thesis Guidelines School of Arts and Sciences. Sul Ross State University, Alpine, TX.
- Zech, J. C., C. Fairlie, S. Hileman, J. Parsons, and B. Six. 2008. Thesis Guidelines School of Arts and Sciences. Sul Ross State University, Alpine, TX.
- Zech, J. C. 2007. Plant Physiology. A Laboratory Manual For Biology 4408. Sul Ross State University, Alpine, Texas.
- Zech, J. C. 2007. *Osmorhiza bipatriata* and *Dalea bartonii* photos in J. M. Poole, W. R. Carr, D. M. Price and J. R. Singhurst, Rare Plants of Texas. Texas A&M University Press.
- . 2005. Field Survey and Population Evaluation for the Shinners' Tickle Tongue (*Zanthoxylum parvum*): Final Report. U.S. Fish and Wildlife Service (No. 1448-20181-99-J835). 1-30.
- Wen, J., P. P. Lowry II., and J. C. Zech. 2004. *Osmorhiza bipatriata* (Apiaceae) in Texas: Taxonomic Status and Conservation Considerations. SIDA. 21: 501-506.
- Karges, J. P. and J. C. Zech. 2003. Another Juniper in Jeff Davis County Texas? We're Not Convinced. SIDA 20: 1325.
- Zech, J. C. 2002. Status of a Reproductively Mixed-Up West Texas Endemic, *Zanthoxylum parvum* (Rutaceae): A Summary. In Texas Rare Plant Conference Proceedings 2001. pp. 16-20. Lady Bird Wildflower Center and U. S. Fish and Wildlife Service, Austin, TX.
- Karges, J. P. and J. C. Zech. 2001. *Cupressus arizonica* (Cupressaceae) New to the Davis Mountains of West Texas. SIDA. 19: 723-725.
- Zech, J. C. 1999. Erratum. A New Variety of *Azorella diversifolia* (Apiaceae) from Southern Chile. Madroño. 46: 165.
- . 1999. Flavonoid Distribution of *Mulinum* (Apiaceae, Hydrocotyloideae, Mulinaceae). Brittonia. 51(4): 415-421.

--- and A. M. Powell. 1999. Discover the Chihuahuan Desert: General Botany. A Laboratory Manual For Biology 1401. 2nd Edition. Sul Ross State University, Alpine, Texas.

Zech, J. C., P. R. Manning, and W. H. Wagner Jr. 1998. A New Adder's-Tongue (*Ophioglossum*: Ophioglossaceae) for North America. SIDA. 18: 307-313.

Zech, J. C. 1997. A New Variety of *Azorella diversifolia* (Apiaceae) from Southern Chile. Madroño. 44: 193-196.

--- and P. R. Manning. 1996. *Ophioglossum engelmannii* in Trans-Pecos Texas. Amer. Fern J. 86(3): 102.

Zech, J. C. 1995. Nomenclatural Novelties on *Mulinum* (Apiaceae). Kurtziana 24: 192.

--- and A. M. Powell. 1993. Discover the Chihuahuan Desert: General Botany. A Laboratory Manual For Biology 1401. Sul Ross State University, Alpine, Texas.

Zech, J. C. 1992. Initial Observations on Tegumen Layer Variation in Three Species of *Luzula* (Juncaceae). Michigan Bot. 31: 25-29.

--- and D. E. Wujek. 1990. Scanning Electron Microscopy of Seeds in the Taxonomy of Michigan *Juncus*. Michigan Bot. 29: 3-18.

RESEARCH AND PROFESSIONAL PRESENTATIONS

Zech, J. C. 2014. My Three Favorite Women in Science. Invited Lecture, San Antonio College, San Antonio, TX.

Zech, J. C. 2012. Thirty Minutes of Me: An Introduction. Invited Lecture, San Antonio College, San Antonio, TX.

Rousselow, J. S. and J. C. Zech. 2011. Spring Baseline Floral Inventory of Hancock Hill, Brewster County, Texas. Texas Acad. Sci. 114: 53.

Zech, J. C. 2010. An Introduction to the Aspens of Texas: The Rarest of the All? Texas Plant Conservation Conference, Lady Bird Johnson Wildflower Center, Austin, TX.

Zech, J. C. 2010. Taxonomy: The Nature of Naming. Texas Master Naturalist, Tierra Grand Chapter, Elephant Mountain Wildlife Management Area, TX (*Invited Speaker*) 1 Aug.

Mancha, V.A. and J. C. Zech. 2010. Coal Ball Analysis: Variations in the Peel Technique. Abstract. Texas Acad. Sci 113: 105 (Poster).

Roberts, P. And J. C. Zech. 2010. The Vascular Plants of Indian Springs and Cienega of Chinati Mountains State Natural Area, Presidio County, Texas, Based on Sampling from Late February 2009 Through April 2009. Texas Acad. Sci. 113: 106 (Poster).

Zech, J. C. 2009. Taxonomy: The Nature of Naming. Texas Master Naturalist, Tierra Grand Chapter, Elephant Mountain Wildlife Management Area, TX (*Invited Speaker*) 9 Oct.

Zech, J. C. 2008. *Zanthoxylum parvum* (Rutaceae): A Rare West Texas Endemic, Safe at Last? Abstract. Texas Acad. Sci. 111: 51.

Zech, J. C. 2008. Plants. Texas Master Naturalist, Tierra Grande Chapter. Big Bend National Park, TX (*Invited Speaker*) 25 Oct.

Zech, J. C. 2006. Austin to Alpine: More Than Just Two Five Lettered Cities That Begin With A. Texas Plant Conservation Conference, Sul Ross State University, Alpine, TX. (*Invited Speaker and Host*).

---. 2004. Botanical Zoo: Three Rare Species from Far West Texas (*Zanthoxylum parvum*, *Osmorhiza bipatriata*, and *Ophioglossum polyphyllum*). Texas Plant Conservation Conference, Lady Bird Johnson Wildflower Center, Austin, TX. (*Invited Speaker*).

Livingston, R. A., P. A. Schlichting, S. J. Carlson, P. R. Manning, and J. C. Zech. 2004. Beyond the Fence Line: Distribution of *Ophioglossum polyphyllum* within West Texas. Abstract. Texas Acad. Sci. 107: 84.

- Zech, J. C. 2001. Status of a Reproductively Mixed-Up West Texas Endemic, *Zanthoxylum parvum* (Rutaceae). Texas Rare Plant Conference, Lady Bird Johnson Wildflower Center, Austin, TX. (*Invited Speaker*).
- Zech, J. C., L. K. Hedges, S. J. Carlson. 2000. The Reproductive Biology of a West Texas Endemic, *Zanthoxylum parvum* (Rutaceae). Third Southwestern Rare and Endangered Plant Conference, Northern Arizona University. 3: 27.
- Zech, J. C. and L. K. Hedges. 1998. The Breeding System of a West Texas Endemic (*Zanthoxylum parvum*, Rutaceae): Evidence of Polyploidy? Abstract. Texas Acad. Sci. 101: 43.
- Zech, J. C. 1997. Isozyme Variation Within Texas Madrone (*Arbutus xalapensis*, Ericaceae). Guadalupe Mountains National Park.
- Zech, J. C. and E. D. Herzog. 1997. Vascular Plants of Nation/s Ranch, Jeff Davis County, Texas. Abstract. Texas Acad. Sci. 100: 45.
- Zech, J. C. and T. O. Hernández. 1996. Flavonoid Compound Chemistry and Hybridization in Trans-Pecos Oaks (*Quercus* sp., Fagaceae). Abstract. Texas Acad. Sci. 99: 17.

GRANTS RECEIVED

- Research Enhancement Program: Determination of Genetic Variation of Three Species of *Arbutus*: the Arizona, California, and Texas Madrones. 2014. \$1045.
- Research Enhancement Program: A New Angle and Curve in the Morphological Variation of Two Pinyon Pines (*Pinus cembroides* and *Pinus edulis*): Are They Really Separate Species? 2013. \$2935.78.
- Research Enhancement Program: Continuation of Morphological Variation of Two Pinyon Pines (*Pinus cembroides* and *Pinus edulis*): Are They Really Separate Species? 2012. \$3894.50.
- Research Enhancement Program: Continuation of Morphological Variation of Two Pinyon Pines (*Pinus cembroides* and *Pinus edulis*): Are They Really Separate Species? 2011. \$3894.50.
- Research Enhancement Program: Morphological Variation of Two Pinyon Pines (*Pinus cembroides* and *Pinus edulis*): Are They Really Separate Species? 2010. \$4867.99.
- Faculty Development and Enrichment Program: Scientific Women for Educators: Chemistry Professor Interviews. Tucson, AZ. 2010. \$1000.00
- School of Arts and Sciences Contingency: Scientific Women for Educators: Chemistry Professor Interviews. Tucson, AZ. 2010. \$500.00
- School of Professional Studies: Scientific Women for Educators: Chemistry Professor Interviews. Tucson, AZ. 2010. \$250.00
- Department of Education: Scientific Women for Educators: Chemistry Professor Interviews. Tucson, AZ. 2010. \$250.00
- Research Enhancement Program: Continued Monitoring, New Searches, and Attempted Restoration of *Ophioglossum polyphyllum* (Ophioglossaceae): Further Development of a TxDOT Management/Protection Program. 2009. \$2826.12.
- Research Enhancement Program: *Ophioglossum polyphyllum* (Ophioglossaceae) and TxDOT: Development of a Management/Protection Program. 2008. \$3238.00
- Research Enhancement Program: Arizona Sampling for the Determination of Genetic Variation of a West Texas Relict *Populus tremuloides* Michx. (Salicaceae). 2007. \$2402.37.
- Research Enhancement Program: Genetic Variation of a West Texas Relict *Populus tremuloides* Michx. (Salicaceae), Part III: Sampling Beyond the Trans-Pecos, New Mexico. 2006. \$2945.47.
- Research Enhancement Program: Genetic Variation of a West Texas Relict *Populus tremuloides* Michx. (Salicaceae), Part II: Further Sampling. 2005. \$2544.39.

Research Enhancement Program: Genetic Variation of a West Texas Relict *Populus tremuloides* Michx. (Salicaceae), Part I: Sampling. 2004. \$3959.22.

Research Enhancement Program: Way Beyond the Fence Line: Further Investigation of *Ophioglossum polyphyllum* A. Br. ex Scub. (Ophioglossaceae) Distribution. 2003. \$3718.80.

Research Enhancement Program: Further Investigation of *Ophioglossum polyphyllum* A. Br. ex Scub. (Ophioglossaceae) Distribution: Beyond the Fence Line. 2002. \$4258.00.

Faculty Development & Enrichment Grant: 53rd Annual Meeting of the American Institute of Biological Sciences: Evolution: Understanding Life on Earth, Washington D. C. 2002. \$890.00.

Research Enhancement Program: An Initial Investigation of the Genetic Diversity of Three Clonal Trans-Pecos Species Using Restriction Fragment Length Polymorphisms. 2001. \$4147.00.

Chihuahuan Desert Research Grant. The Distribution of a New Species of Fern for Texas and North America North of Mexico, *Ophioglossum polyphyllum* A. Br. Ex Scub. (Ophioglossaceae). 2000. \$5500.00.

Research Enhancement Program: The Distribution of a New Species of Fern for Texas and North America North of Mexico, *Ophioglossum polyphyllum* A. Br. Ex Scub. (Ophioglossaceae). 2000. \$3307.00.

U.S. Fish and Wildlife Service: Field Surveys and Population Evaluations for the Shinners' Tickle Tongue (*Zanthoxylum parvum*). 1999-2003. \$26,065.00.

Faculty Development & Enrichment Grant: 46th Annual Missouri Botanical Garden Systematics Symposium. 1999. \$526.29.

Chihuahuan Desert Research Grant. Genetic Variation Within a New Species of Fern for Texas, *Ophioglossum polyphyllum* A. Br. Ex Scub. (Ophioglossaceae) Part II: Continued sampling. 1999. \$5500.00.

Research Enhancement Program: Genetic Variation Within a New Species of Fern for Texas, *Ophioglossum polyphyllum* A. Br. Ex Scub. (Ophioglossaceae) Part II: Continued Sampling. 1999. \$2960.00.

Chihuahuan Desert Research Grant. Genetic Variation Within a New Species of Fern for Texas, *Ophioglossum polyphyllum* A. Br. Ex Scub. (Ophioglossaceae). 1998. \$5500.00.

Faculty Development & Enrichment Grant: Flora of the Southeastern United States Symposium, Botanical Research Institute of Texas. 1998. \$520.00.

Research Enhancement Program: Genetic Variation Within a New Species of Fern for Texas, *Ophioglossum polyphyllum* A. Br. Ex Scub. (Ophioglossaceae). 1998. \$3593.13.

Faculty Development & Enrichment Grant: 44th Annual Missouri Botanical Garden Systematics Symposium. 1997. \$841.00.

Chihuahuan Desert Research Grant. Is Shinners' Tickle Tongue a Polyploid? An Isozyme Investigation of *Zanthoxylum parvum* Shinners (Rutaceae).1997. \$5500.00.

Research Enhancement Program: Is Shinners' Tickle Tongue a Polyploid? An Isozyme Investigation of *Zanthoxylum parvum* Shinners (Rutaceae).1997. \$4480.14.

Research Enhancement Program: Allozyme Diversity and Population Genetic Structure in Texas Madrone (*Arbutus xalapensis*, Ericaceae), Part III: Final Sampling and Completion. 1996. \$3859.60.

Chihuahuan Desert Research Grant. Allozyme Diversity and Population Genetic Structure in Texas Madrone (*Arbutus xalapensis*, Ericaceae), Part III: Final Sampling and Completion. 1996. \$5000.00.

Research Enhancement Program: Allozyme Diversity and Population Genetic Structure in Texas Madrone (*Arbutus xalapensis*, Ericaceae), Part II: Trans-Pecos Sampling. 1995. \$4003.29.

Chihuahuan Desert Research Grant. Allozyme Diversity and Population Genetic Structure in Texas Madrone (*Arbutus xalapensis*, Ericaceae), Part II: Trans-Pecos Sampling. 1995. \$5000.00.

Faculty Development & Enrichment Grant: 42nd Annual Missouri Botanical Garden Systematics Symposium. 1995. \$1028.50.

Research Enhancement Program: Mini-Research Proposal. Allozyme Diversity and Population Genetic Structure in Texas Madrone (*Arbutus xalapensis*, Ericaceae), Part I. 1994. \$1043.70.

Chihuahuan Desert Research Grant. Allozyme Diversity and Population Genetic Structure in Texas Madrone (*Arbutus xalapensis*, Ericaceae). 1994. \$5000.00.

Janice Beatley Herbarium Award, 1990. \$200.00.

The American Society of Plant Taxonomists John Ayers Award for travel to foreign herbaria, 1988. \$500.00.

National Science Foundation, Doctoral Dissertation Research Grant. Systematics of the Genus *Mulinum* Pers. (Apiaceae). BSR-8815311. 1988. \$6221.10.

Tinker Foundation Foreign Field Research Grant, 1988. \$1227.00.

Central Michigan University School of Graduate Studies Graduate Student Financial Assistance for Research Related Expenditures, 1985. \$300.00.