Vitae: William Bryan Terzaghi

Personal Information

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Wilkes University
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Professional Experience

2008-present — Professor
Department Biology
Wilkes University

Jan- August 2007 — Visiting Associate Professor
Dept Molecular, Cellular and Developmental Biology
Yale University

2001-2008 — Associate Professor
Department Biology
Wilkes University

1995 -2001 — Assistant Professor
Department Biology
Wilkes University

Training:

Post-doctoral:	1988 - 1995	University of Pennsylvania, Plant Science Institute Dr AR Cashmore, supervisor
	1986 - 1988	Carnegie Institution of Washington, Dept Plant Biology Dr CB Field, supervisor
Graduate:	1980 - 1986	University of Utah, Dept Biological Sciences PhD in Plant Cell Biology, August, 1986 Dr KG Lark, supervisor
Undergraduate:	1977 - 1979	University of Waikato (Hamilton, New Zealand) BSc. in Biology
	1972 - 1973	Reed College [Portland, Oregon]

Honors and awards:

President's Award for Excellence in Scholarship: 2021
Honorary Professor in the Chinese Academy of Agricultural Sciences
Interdisciplinary Teaching Award: 2016
Outstanding Advisor Award: 2016
Outstanding Faculty Award: 2012
Outstanding Faculty Award: 2009
Outstanding Faculty Award: 2008
Outstanding Faculty Award: 2006
Outstanding Faculty Award: 2004
Outstanding Faculty Award: 2003
Innovative Teacher Award: 2003
Faculty Choice Award: 2003
Final Word Lecture: 1999
NSF Postdoctoral Fellowship in Plant Biology: 1988 - 1991
Carnegie Institution of Washington Postdoctoral Fellowship: 1986 - 1988
University of Utah graduate research fellowship: 1984 - 1985
NSF Predoctoral Fellowship: 1981 - 1984
Ivon Watkins-Dow Science Bursary: 1979

Professional Society Memberships

American Society of Plant Biologists
American Association for the Advancement of Science

University service

- Co-director of the Synthetic Biology track of the Wilkes University MS in Bioengineering Program
- Organizer and chair of the Wilkes University Institutional Biosafety Committee.
- Member of the Strategic Planning Committee
- Former member of the Master Planning Committee
- Former member of the Tenure and Promotion Committee
- Former chair of the Faculty Development Committee (1998-2004), and member since 1996.
- Former member of the Core Review Committee
- Former member of the Core Review Task force
- Former member of the Wilkes University School of Science and Engineering academic standards committee.
- Advisor to the Biology Club.
- Advisor to the Biology Department newsletter.
- Advisor to the Running Club.
- Advisor to 25 students

Grants

1. Studying Resveratrol and Piceid Production by Japanese Knotweed and Arabidopsis thaliana. Co-Pi with Drs. K. Klemow and D. Mencer. Wilkes University Mentoring Committee. Wilkes University Research and Scholarship grant. 2019-2022 $29,993

2. Using synthetic biology to develop novel approaches for treating kidney stones. Co-Pi with Dr. A. VanWert. Wilkes University Mentoring Committee. 2019-2020 $13,542.80.

3. Studying Resveratrol and Piceid Synthesis by Japanese Knotweed and transgenic *Arabidopsis thaliana.* Wilkes University Faculty Development Committee. 2019-2020. $4,200.

4. Measuring resveratrol synthesis by Japanese Knotweed seedlings**.** Co-Pi with Drs. K. Klemow and D. Mencer. Wilkes University Mentoring Committee. 2018-2019 $13,488

5. Using synthetic biology to develop novel approaches for treating kidney stones. Co-Pi with Drs. D. Lucent and A. VanWert. Wilkes University Mentoring Committee. 2018-2019. $13,487

6. Using synthetic biology to engineer probiotic bacteria that detoxify oxalate in the gut as a potential preventative treatment for kidney stones. Wilkes University Faculty Development Committee. 2018-2019. $4,200.

7. Measuring resveratrol production by Japanese Knotweed**.** Co-Pi with Drs. K. Klemow and D. Mencer. Wilkes University Mentoring Committee. 2017-2018. $13,543

8. Using synthetic biology to develop novel approaches for treating kidney stones. Co-Pi with Drs. D. Lucent and A. VanWert. Wilkes University Mentoring Committee. 2017-2018. $13,543

9. Determining the functions of non-coding RNAs in the model plant *Arabidopsis thaliana.* Wilkes University Research and Scholarship grant. 2016-2019 $29,985

10. Development of a Probiotic Treatment for Kidney Stones through Synthetic Biology. Co-Pi with Drs. D. Lucent and A. VanWert. Wilkes University Research and Scholarship grant. 2016-2019 $30,000

11. Using synthetic biology to develop novel approaches for treating kidney stones. Co-Pi with Drs. D. Lucent and A. VanWert. Wilkes University Mentoring Committee. 2016-2017 $13,542.80

12. Studying Natural Variation in Resveratrol and Piceid Production by Japanese Knotweed. Co-Pi with Drs. K. Klemow and D. Mencer. Wilkes University Mentoring Committee. 2016-2017. $13,542.80

13. A three-pronged approach to treating kidney stones. Co-Pi with Drs. D. Lucent and A. VanWert. Wilkes University Mentoring Committee. 2016-2017 $13,542.80

14. Comparing the effectiveness of *Escherichia coli* and *Magnetospirillum gryphiswaldense* as hosts for the expression and purification of enzymes that degrade oxalate. Wilkes University Faculty Development Committee. 2016-2017 $4,200.

15. Studying Resveratrol production by Japanese Knotweed grown from seed. Co-Pi with Drs. K. Klemow and D. Mencer. Wilkes University Mentoring Committee. 2015-2016. $13,542.80

16. Development of a probiotic treatment for kidney stones through synthetic biology. Co-Pi with Drs. D. Lucent and A. VanWert. Wilkes University Mentoring Committee. 2015-2016. $13,542.80.

17. Determining the function of a non-coding RNA in the model plant *Arabidopsis thaliana*. Wilkes University Faculty Development Committee. 2015-2016. $4,200.

18. URM: Mentoring Minority Students to Graduate Success through Year-Round Research Projects. PI. 2009-2014, NSF $704,323

19. MRI-R2: Acquisition of Growth Chambers.PI. 2010-2013, NSF $$210,880

20. Undergraduate Biology Education Grant at Wilkes University. Co-PI with Dr. M.A. Steele (PI) and11 other Wilkes faculty. 2008-2012. Howard Hughes medical Institute. $1,000,000

21. Evaluating the ability of sweet sorghum (*Sorghum bicolor*) to serve as an energy-producing plant when grown using gray water. Co-PI with Dr. Kenneth Klemow. 2010 Ethosgen $21,262

22. ROA supplement to "Virtual Center for Analysis of Rice Genome Transcription." (Xing-Wang Deng, PI) 2007, NSF $64,322

23. cRUI: A Multidisciplinary Approach to Understanding the Ecological and Evolutionary Interactions between Food-hoarding Animals and the Oaks. Co-PI with Dr. M.A. Steele (PI), J. Carlson & P. Smallwood . 1999-2003, NSF $ 833,732

24. I-Grad Link to Learn: informatics initiative, Co-PI with 8 other faculty at Wilkes. 2001-2002, PA Dept of Education, $280,717

25. Merck-AAAS Undergraduate Science Research Program. PI 2003-2006. $60,000

26. Cloning and characterizing soybean enoyl-ACP reductase. 1998-2000. USDA/NRICGP. $49,969.

27. An Inquiry-based Approach to Photosynthesis in the Undergraduate Laboratory: Learning in Real-time. An LEEF proposal submitted to LI-COR Biosciences.2007. PIs W Terzaghi and N. Fetcher $25,000.

28. Studying rice hybrid vigor. 2009. Wilkes University mentoring grant. $10, 175.

29. Making sense of hybrid vigor. 2008. Wilkes University mentoring grant. $14,763

30. Making sense of antisense genes at Yale. 2007. Wilkes University mentoring grant. $9485.

31. Studying the molecular basis of hybrid vigor: identifying genes that are polymorphic in *Oryza sativa ssp indica* and *Oryza sativa ssp japonica* in order to study their epigenetic modifications and patterns of expression in F1 hybrids. 2008-2009. Wilkes University institutional grant. $3,780

32. Studying the structure and function of rice native antisense transcripts. 2007-2008. Wilkes University institutional grant. $4000.

33. Color-coding the organelles in a plant cell. 2006-2007. Wilkes University institutional grant. $4000.

34. Acclimation of oak seedlings to their light environment.. 2005-2006. Wilkes University institutional grant. $3274.

35. Who's your momma? Identifying the female parent of acorns in native forests.. 2004-2005. Wilkes University institutional grant. $3274.

36. Who's your daddy? Identifying the male parent of acorns in native forests.. 2003-2004. Wilkes University institutional grant. $2500.

37. Analyzing the composition and function of mitochondria from Arabidopsis fatty acid mutants. 2002-2003 Wilkes University institutional grant. $2500.

38. Cloning and characterizing enoyl-ACP reductase from soybean. 1998. Wilkes University institutional grant. $1500.

39. Developing a simple technique for generating transgenic plants suitable for undergraduate research at a small institution. 1996. Wilkes University institutional grant. $1480

Publications

1. Qi L, Shi Y, Terzaghi W, Yang S, Li J. (2022). Integration of light and temperature signaling pathways in plants. J Integr Plant Biol. Epub ahead of print doi: 10.1111/jipb.13216.

2. Cong Li, Lijuan Qi, Shaoman Zhang, Xiaojing Dong, Yanjun Jing, Jinkui Cheng, Ziyi Feng, Jing Peng, Hong Li, Yangyang Zhou, Xiaoji Wang, Run Han, Jie Duan, William Terzaghi, Rongcheng Lin, Jigang Li, (2021). Mutual upregulation of HY5 and TZP in mediating phytochrome A signaling, *The Plant Cell***,;,** koab254, https://doi.org/10.1093/plcell/koab254

3. Fan S, Zhang L, Tang M, Cai Y, Liu J, Liu H, Liu J, Terzaghi W, Wang H, Hua W, Zheng M. CRISPR/Cas9-targeted mutagenesis of the BnaA03.BP gene confers semi-dwarf and compact architecture to rapeseed (Brassica napus L.). Plant Biotechnol J. 2021 Dec;19(12):2383-2385. doi: 10.1111/pbi.13703.

4. Li Y, Deng Z, Kamisugi Y, Chen Z, Wang J, Han X, Wei Y, He H, Terzaghi W, Cove D, Cuming A, Chen H (2021) A minus-end directed kinesin motor directs gravitropism in *Physcomitrella patens*. *Nat Commun* **12,** 4470. https://doi.org/10.1038/s41467-021-24546-2

5. Xi Wu, Hui Feng, Di Wu, Shijuan Yan, Pei Zhang, Wenbin Wang, Jun Zhang, Junli Ye, Guoxin Dai, Yuan Fan, Weikun Li, Baoxing Song, Zedong Geng, Wanli Yang, Guoxin Chen, Feng Qin, William Terzaghi, Michelle Stitzer, Lin Li, Lizhong Xiong, Jianbing Yan, Edward Buckler, Wanneng Yang & Mingqiu Dai (2021). Using high-throughput multiple optical

phenotyping to decipher the genetic architecture of maize drought tolerance *Genome Biology* 22, Article number: 185 https://doi.org/10.1186/s13059-021-02377-0

6. Song K, Sun Y, Qin Q, Sun L, Zheng X, Terzaghi W, Lv W, Xue Y (2020). The Effects of Earthworms on Fungal Diversity and Community Structure in Farmland Soil With Returned Straw. *Front. Microbiol* | https://doi.org/10.3389/fmicb.2020.594265

7. Song K, Sun L, Lv W, Zheng X, Sun Y, Terzaghi W, Qin Q, Xue Y. 2020. Earthworms accelerate rice straw decomposition and maintenance of soil organic carbon dynamics in rice agroecosystems. *PeerJ* 8:e9870 https://doi.org/10.7717/peerj.9870

8. David Hontz, Jayden Hensley, Kayla Hiryak, Jennifer Lee, Jared Luchetta, Maria Torsiello, Michael Venditto, Del Lucent, William Terzaghi, Donald Mencer, Ajay Bommareddy, and Adam L. VanWert (2020). A Copper(II) Macrocycle Complex for Sensing Biologically Relevant Organic Anions in a Competitive Fluorescence Assay: Oxalate Sensor or Urate Sensor? *ACS Omega* 5, 19469-19477 ***DOI: 10.1021/acsomega.0c01655***

9. Dong X, Yan Y, Shi Y, Jia Y, Shi Y, Cheng J, Li H, Zhang S, Zhou Y, Wang X, Qi L, Han R, Terzaghi W, Gu H, Kang D, Yang S, Li J (2020). The cold response regulator CBF1 promotes Arabidopsis hypocotyl growth at ambient temperatures. EMBO J 39:e103630 https://doi.org/10.15252/embj.2019103630

10. Yan Y, Li C, Dong X, Li H, Zhang D, Zhou Y, Jiang B, Peng J, Qin X, Cheng J, Wang X, Song P, Qi L, Zheng Y, Li B, Terzaghi W, Yang S, Yan Guo Y, Li J (2020). MYB30, a key negative regulator of Arabidopsis photomorphogenic development, acts to promote PIF4 and PIF5 protein accumulation in the light. *The Plant Cell* 32:2196-2215 https://doi.org/10.1105/tpc.19.00645

11. Li J, Terzaghi W, Gong Y, Li C, LingJ-J, Fan Y, Qin N,Gong X, Zhu D, Deng X-W (2020). Modulation of BIN2 kinase activity by HY5 controls hypocotyl elongation in the light. *Nat Commun* 11:1592. DOI:10.1038/s41467-020-15394-7

12. Zhang H., Xiang Y., He N., Liu X., Liu H., Fang L., Zhang F., Sun X., ZhangD., Li X., Terzaghi W., Yan J., and Dai M. (2020). Enhanced Vitamin C Production Mediated by an ABA-induced PTP-Like Nucleotidase Improves Drought Tolerance of Arabidopsis and Maize. *Mol. Plant*.doi: https://doi.org/10.1016/j.molp.2020.02.005

13. Qi L., Liu S., Li C., Fu J., Jing Y., Cheng J., Li H., Zhang D., Wang X.,Dong X., Han R., Li B., Zhang Y., Li Z., Terzaghi W., Song C.-P., Lin R., Gong Z., and Li J. (2020). PHYTOCHROME-INTERACTING FACTORS interact with the ABA receptors PYL8 and PYL9 to orchestrate ABA signaling in darkness. **Mol. Plant.** doi: https://doi.org/10.1016/j.molp.2020.02.001.

14. Tang W, Ye J, Yao X, Zhao P, Xuan W, Tian Y, Zhang Y, Xu S, An H, Chen G, Yu J, Wu W, Ge Y, Liu X, Li J, Zhang H, Zhao Y, Yang B, Jiang X, Peng C, Zhou C, Terzaghi W, Wang C, Wan J (2019). Genome-wide associated study identifies NAC42-activated nitrate transporter

conferring high nitrogen use efficiency in rice. *Nat Commun* **10,** 5279 doi:10.1038/s41467-019-13187-1

15. Yu X, Dong J, Deng Z, Jiang Y, Wu C, Qin X, Terzaghi W, Haodong Chen H, Dai M, and Deng XW (2019). *Arabidopsis* PP6 phosphatases dephosphorylate PIF proteins to repress photomorphogenesis. *Proc Natl Acad Sci USA* 116: 20218–20225 DOI: 10.1073/pnas.1907540116

16. Short J. D., Terzaghi W. B. and Sabouni A. (2019). Toward Magnetosomes for Breast Cancer Theranostics. IEEE Journal of Electromagnetics DOI: 10.1109/JERM.2019.2948829

17. Zheng M, Zhang L, Tang M, Liu J, Liu H, Yang H, Fan S, Terzaghi W, Wang H, Hua W (2019). Knockout of two Bna MAX 1 homologs by CRISPR /Cas9-targeted mutagenesis improves plant architecture and increases yield in rapeseed (Brassica napus L.) *Plant Biotechnology Journal* DOI: 10.1111/pbi.13228

18. Zheng M, Hu M, Yang H, Tang M, Zhang L, Liu H, Li X, Liu J, Sun X, Fan S, Zhang J, Terzaghi W, Pu H, Hua W (2019). Three BnaIAA7 homologs are involved in auxin/brassinosteroid-mediated plant morphogenesis in rapeseed (Brassica napus L.**).** *Plant Cell Rep.* https://doi.org/10.1007/s00299-019-02410-4

19. Wasiluk T, Roueinfar M, Hiryak K, Torsiello M, Miner A, Lee J, Venditto M, Terzaghi W, Lucent D, VanWert AL (2019). Simultaneous expression of ClopHensor and SLC26A3 reveals the nature of endogenous oxalate transport in CHO cells. *Biology Open 2019*: bio.041665 doi: 10.1242/bio.041665

20. Luo X, Wang B, Gao S, Zhang F, Terzaghi W, Dai M (2019). Genome-wide association study dissects the genetic bases of salt tolerance in maize seedlings. *Journal of Integrative Plant Biology* DOI: 10.1111/jipb.12797

21. Zhang P, Fan Y, Sun X, Chen L, Terzaghi W, Bucher E, Li L, Dai M(2019). A large-scale circular RNA profiling reveals universal molecular mechanisms responsive to drought stress in maize and Arabidopsis. *Plant J* doi: 10.1111/tpj.14267

22. Zhou Y, Yang L, Duan J, Cheng J, Shen Y, Wang X, Han R, Li H, Li Z, Wang L, Terzaghi W, Zhu D, Chen H, Deng XW, Li J (2018). Hinge region of *Arabidopsis* phyA plays an important role in regulating phyA function. *Proc Natl Acad Sci USA*.115: E11864-E11873. DOI: 10.1073/pnas.1813162115

23. Wang X, Yang M, Ren D, Terzaghi W, Deng XW, He G (2018). Cis-regulated alternative splicing divergence and its potential contribution to environmental responses in Arabidopsis. *Plant J*. doi: 10.1111/tpj.14142. [Epub ahead of print]

24. Cai Y, Zhang W, Jin J, Yang X, You X, Yan H, Wang L, Chen J, Xu J, Chen W, Chen X, Ma J, Tang X, Kong F, Zhu X, Wang G, Jiang L, Terzaghi WB, Wang C, Wan J (2018). OsPKpα1 encodes a plastidic pyruvate kinase that affects starch biosynthesis in the rice endosperm: OsPKpα1 affects starch biosynthesis in rice endosperm. *Journal of Integrative Plant Biology*. DOI: 10.1111/jipb.12692

25. He Z, Zhong J, Sun X, Wang B, Terzaghi W, Dai M (2018) The maize ABA receptors ZmPYL8, 9 and 12 facilitate plant drought resistance. *Front. Plant Sci*. doi: 10.3389/fpls.2018.00422

26. Zhang S, Li C, Zhou Y, Wang X, Li H, Feng Z, Chen H, Qin G, Jin D, Terzaghi W, Gu H, Qu L-J, Kang D, Deng XW, Li J (2018). TANDEM ZINC-FINGER/PLUS3 is a key component of phytochrome A signaling. *The Plant Cell* **30:** DOI 10.1105/tpc.17.00677

27. Tang J, Zhang W, Chen G, Sun J, Tian Y, Tang W, Yu J, An H, Wu T, Kong F, Wen K, Terzaghi W, Wang C, Wan J (2017). OsPPR6, a pentatricopeptide repeat protein involved in editing and splicing chloroplast RNA, is required for chloroplast biogenesis in rice. *Plant Molecular Biology* **95**:1-13 DOI10.1007/s11103-017-0654-0

28. Sun J, Zheng T, Yu J, Wu T, Wang X, Chen G, Tian Y, Zhang H, Wang Y, Terzaghi W, Wang C, Wan J-M (2017). TSV, a putative plastidic oxidoreductase, protects rice chloroplasts from cold stress during development by interacting with plastidic Thioredoxin Z. *New Phytologist* **215:**240-255. DOI:10.1111/nph.14482

29. Feng Z, Wu C, Wang C, Roh J, Zhang L, Chen J, Zhang S, Zhang H, Yang C, Hu J, You X, Liu X, Yang X, Guo X, Zhang X, Wu F, Terzaghi W, Kim SK, Jiang L, Wan J (2016). SLG controls grain size and leaf angle by modulating brassinosteroid homeostasis in rice. J Exp Bot. **67**:4241-53. doi: 10.1093/jxb/erw204.

30. Sun N, Wang J, Gao Z, Dong J, He H, Terzaghi W, Wei N, Deng XW, Chen H. (2016). Arabidopsis SAURs are critical for differential light regulation of the development of various organs. *Proc Natl Acad Sci U S A*.113: 6071-6076. DOI: 10.1073/pnas.1604782113

31. Wang Y, Wang C, Zheng M, Lyu J, Xu Y, Li X, Niu M, Long W, Wang D, Wang HY, Terzaghi W, Wang Y, Wan J (2016). WHITE PANICLE1, a Val-tRNA Synthetase Regulating Chloroplast Ribosome Biogenesis in Rice, Is Essential for Early Chloroplast Development. *Plant Physiol*. 170*:* 2110-2123. DOI*:10.1104/pp.15*.01949

32. Zhou D, Chen W, Lin Z, Chen H, Wang C, Li H, Yu R, Zhang F, Zhen G, Yi J, Li K, Liu Y, Terzaghi W, Tang X, He H, Zhou S and Deng XW (2016). Pedigree-based Analysis of Derivation of Genome Segments of an Elite Rice Reveals Key Regions during Its Breeding. *Plant Biotech. J*. 14:638-48. DOI: 10.1111/pbi.12409

33. Li K, Gao Z, He H, Terzaghi W, Fan L-M, Deng XW, Chen H (2015). Arabidopsis DET1 Represses Photomorphogenesis in part by Negatively Regulating DELLA Protein Abundance in Darkness. *Mol. Plant* **8 :** 622-630.

34. Dong J, Terzaghi W, Deng XW, Chen H (2015). Multiple photomorphogenic repressors work in concert to regulate Arabidopsis seedling development. Plant signaling & behavior 10(3):e1011934 DOI: 10.1080/15592324.2015.1011934

35. Zheng M, Wang Y, Wang Y, Wang C, Ren Y, Lu J, Peng C, Wu T, Liu K, Zhao S, Liu X, Jiang L, Terzaghi W, Wan J (2015). *DEFORMED FLORAL ORGAN1* (*DFO1*) regulates floral organ

identity by epigenetically repressing expression of *OsMADS58* in rice (*Oryza sativa*). *New Phytologist* **206:**1476-1490

36. Dong J, Tang D, Gao Z, Yu R, Li K,He H, Terzaghi W, Deng XW, Chen H (2014). Arabidopsis De-etiolated 1 Represses Photomorphogenesis by Positively Regulating Phytochrome-Interacting Factors in the Dark. *Plant Cell* **26:**3630-45

37. Wang Y, Fan X, Lin F, He G, Terzaghi W, Zhu D, Deng XW (2014). An *Arabidopsis* noncoding RNA mediates control of photomorphogenesis by red light. *Proc Natl Acad Sci USA* 111: 10359–10364

38. Wang Y, Wang X, Deng W, Fan X, LiuT-T, He G, Chen R, Terzaghi W, Zhu D, Deng XW (2014). Genomic features and regulatory roles of intermediate-size non-coding RNAs in Arabidopsis. *Mol. Plant* **7 :** 514-527.

39. Chen W, Chen H, Zheng T, Yu R, Terzaghi WB, Li Z, Deng XW, Xu J, He H (2014). Highly efficient genotyping of rice biparental populations by GoldenGate assays based on parental resequencing. *Theoretical and Applied Genetics* **127:** 297-307

40. Li, J., Yang L., Jin, D., Nezames, C.D., Terzaghi, W and Deng X-W(2013). UV-B–induced photomorphogenesis in plants. *Protein Cell* **4**: 485-9

41. Dai, M., Xue, Q., McCray, T., Chen, F., Margavage, K, Lee, J-H, Nezames,C, Guo, L, Terzaghi, W., Wan, J., Deng, X., and Wang, H. (2013). The Arabidopsis PP6 Phosphatase Regulates ABI5 Phosphorylation and ABA Signaling. *Plant Cell* **25**: 517-534

42. Dai, M., Terzaghi, W and Wang, H. (2013). Multifaceted roles of Arabidopsis PP6 phosphatase in regulating cellular signaling and plant development. *Plant Signaling & Behavior* **8**: 1-5

43. Dai, M., Zhang, C., Kania, U., Chen, F., Xue, Q., Mccray, T., Li, G., Qin, G., Wakeley, M., Terzaghi, W., Wan, J., Zhao, Y., Xu, J., Friml, J., Deng, X., and Wang, H. (2012). A novel phosphatase holoenzyme complex directly regulates PIN phosphorylation and auxin efflux in Arabidopsis. *Plant Cell*. **24:** 2497–2514.

44. Shen H, He H, Li J, Chen W, Wang X, Guo L, Peng Z, He G, Zhong S, Qi Y, Terzaghi W, Deng XW (2012). Genome-wide analysis of DNA methylation and gene expression changes in two *Arabidopsis* ecotypes and their reciprocal hybrids. *Plant Cell.* **24:** 875-892

45. Li J , Terzaghi W, Deng XW (2012). Genomic basis for light control of plant development. *Protein Cell* **3**: 1-11

46. Lee, J-H. W.Terzaghi, and Deng XW (2011). DWA3, an *Arabidopsis* DWD protein, acts as a negative regulator in ABA signal transduction. *Plant Sci* **180**:352-357

47. Lee J-H, Yoon H-J, Terzaghi W, Martinez Hernandez C, Dai M, Li J, Byun M-O and Deng X-W (2010). DWA1 and DWA2, two *Arabidopsis* DWD protein components of CUL4-based E3 ligases, act together as negative regulators in ABA signal transduction. *Plant Cell* **22**: 1716-1732

48. Bai S, Zhang J, Li S, Chen H, Terzaghi W, Zhang X, Chi X, Tian J, Luo H, Huang W, Chen Y, Zhang Y (2010). Detection of Six Genetically Modified Maize Lines Using OpticalThin-Film Biosensor Chips. *J. Agric. Food Chem.* **58**: 8490–8494

49. Chen H, Huang X, Gusmaroli G, Terzaghi W, Lau OS, Yanagawa Y, Zhang Y, Li J, Lee JH, Zhu D and Deng XW (2010). Arabidopsis CULLIN4-Damaged DNA Binding Protein 1 Interacts with CONSTITUTIVELY PHOTOMORPHOGENIC1-SUPPRESSOR OF PHYA Complexes to Regulate Photomorphogenesis and Flowering Time. *Plant Cell* **22:**108-123

50. Zhang,Y , S Feng W Terzaghi, XW Deng (2008) *A New Family of Plant E3 Ubiquitin Ligases*. Plant Signaling & Behavior 3: 1049 - 1052

51. Yin,B, D Zhang,L Guo,W Terzaghi, X Wang,T Liu, H He, Z Chen, XW Deng (2008). *Integration of Cytological Features with molecular and epigenetic properties in Rice Chromosome 4*. Molecular Plant.1: 816-825

52. Klemow, K. and W. Terzaghi (2008) *Introduction to the Biological Literature* Posted at BioSciEdNet: http://www.biosciednet.org/portal/contribute/uploads/Wilkes.Bio-Lit.lab.doc

53. Lee, J-H., W.Terzaghi, G. Gusmaroli, J.-B. Frenette Charron, H.-J. Yoon, H Chen, Y J He, Y. Xiong and X.-W. Deng. (2008) Characterization of Arabidiopsis and Rice DWD Proteins and Their Roles as Substrate Receptors for CUL4-RING E3 Ubiquitin Ligases. *Plant Cell* **20:** 152-167

54. Li,X , X Wang, K He, Y Ma, N Su, H He, V Stolc, W Tongprasit, W Jin, J Jiang, W Terzaghi, S Li and X.- W Deng (2008) High resolution mapping of epigenetic modifications of the rice genome uncovers interplay between DNA methylation, histone methylation and gene expression. *Plant Cell* **20:** 259-276

55. Steele, M. A., J.E. Carlson, P. D. Smallwood, A.B. McEuen, T. Contreras, and W. B. Terzaghi (2007). Linking seed and seedling shadows: A case study in the oaks (*Quercus*). *In:* Seed Dispersal: Theory and its Application in a Changing World. A.J. Dennis, R.J. Green, E.W Schupp,and D.A. Westcott, eds. Oxford University Press, Inc, New York, 720 pp.

56. Steele, M. A., P. D. Smallwood, W. Terzaghi, J. Carlson, T. Contreras, and A. McEuen. (2003) Oak Dispersal Syndromes: Do red and white oaks exhibit different dispersal strategies? Proceedings of the Upland Oak Symposium, October 2002, Technical Publication of the U.S. Forest Service.

57. Terzaghi WB (1999) Cornucopia or Pandora's Box? The promise and perils of cloning, genetic engineering and bioinformatics. Wilkes University Press. Wilkes-Barre, PA

58. Terzaghi WB, Bertekap RL Jr. and Cashmore AR (1997) Intracellular localization of GBF proteins and blue light-induced import of GBF2 fusion proteins into the nucleus of cultured Arabidopsis and soybean cells. *Plant J*. **11**: 967-982

59. Chao Q, Rothenberg M, Solano R, Roman G, Terzaghi W and Ecker JR (1997) Activation of the ethylene gas response pathway in *Arabidopsis* by the nuclear protein ETHYLENE-INSENSITIVE3 and related proteins. *CELL* **89:** 1133-1144

60. Terzaghi WB and Cashmore AR (1997) Plant cell transfection by electroporation. *in* : Methods in Molecular Biology, vol. 62: Recombinant Gene Expression Protocols. (R. Tuan, ed.) Humana Press, Inc., Totowa, N.J. 453-462

61. Terzaghi WB, Cashmore AR (1995) Light-regulated transcription. *Annu. Rev. Plant Physiol. Plant Mol. Biol.* **46**: 445-474

62. Terzaghi W, Cashmore A (1995) Seeing the light in plant development. *Current Biology* **5**: 466-468

63. Schindler U, Terzaghi W, Beckmann H, Kadesch T, Cashmore AR (1992) DNA binding site preferences and transcriptional activation properties of the *Arabidopsis* transcription factor GBF1. *EMBO J* **11**: 1275-1289

64. McGrath JM, Terzaghi WB, Sridhar P, Cashmore AR, Pichersky E (1992) Sequence of the fourth and fifth Photosystem II type I chlorophyll a/b-binding protein genes of *Arabidopsis thaliana* and evidence for the presence of a full complement of the extended CAB gene family. *Plant Mol. Biol.* **19**: 725-733

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Recent Published Abstracts of Student Research (last 5 years) out of more than 100 total

1. K. Mejia, K. Werkheiser, K. Clarke, A. Womelsdorf, L. Johnson, J. Alvarado-Rosario, A. Black, M. Yatison, K. Klemow, D. Mencer, W. Terzaghi. Time-course of resveratrol and piceid synthesis by Japanese Knotweed seedlings. Presented at the annual meeting of the ASPB in San Jose, CA August 3-7, 2019

2. K. Clarke, A. Ford, J. Alvarado-Rosario, L. Johnson, K. Mejia, K. Werkheiser, A. Womelsdorf, W. Terzaghi. Learning molecular biology by studying genes potentially affecting biofuel production in *Arabidopsis thaliana*. Presented at the annual meeting of the ASPB in San Jose, CA August 3-7, 2019

3. H. Arcure, D. E. Mencer, W. Terzaghi, K. Klemow. Photoisomerization of piceid: Implications for the analysis of resveratrol. Presented at the annual meeting of the ACS in Boston MA Aug 19-23, 2018

4. M. Yatison, A. Ford, W. Terzaghi. Learning molecular biology by studying ABA synthesis and signaling genes in Arabidopsis ncRNA mutants. Presented at the annual meeting of the ASPB in Montreal, CA July 14-18, 2018

5. W. Terzaghi, M. Yatison, A. Ford, A Black, K. Mejia, K. Werkheiser, J. Patel, L.Le, L. Pande, O. Raymond, K. Klemow, D. Mencer. Sex-Based Differences and Time-course of Resveratrol and Piceid Synthesis by Japanese Knotweed. Presented at the annual meeting of the ASPB in Montreal, CA July 14-18, 2018

6. W. Terzaghi, M. Plumhoff, D. Goetz, T. Erney, C. Morocho, J. Alvarado-Rosario, N. Scarantino, X-W Deng, D. Zhu. Studying the Functions of Two Arabidopsis thaliana noncoding RNAs. Presented at the annual meeting of the ASPB in Montreal, CA July 14-18, 2018

7. T. Wasiluk, L. Pande, D. Lucent, W. Terzaghi. Bioengineering Cyanobacteria and Higher Plants for Atrazine Remediation. Presented at the annual meeting of the ASPB in Honolulu, HI, June 24-28, 2017

8. W. Terzaghi, M. Yatison, A. Ford, A Mikolon, D. Pupaza, J. Luchetta, K. Klemow, D. Mencer. Sex-Based Differences in Resveratrol and Piceid Production by Japanese Knotweed. Presented at the annual meeting of the ASPB in Honolulu, HI, June 24-28, 2017

6. M. Roueinfar, C. Morocho, E. Sites, X-W Deng, W. Terzaghi. Two novel non-coding RNA molecules that have unexpected roles in controlling plant development. Presented at the annual meeting of the ASPB in Honolulu, HI, June 24-28, 2017

7. M. Yatison, A. Ford, A. Mikolon, D. Pupaza, J. Luchetta, K. Klemow, W. Terzaghi, D. Mencer **Determination of sex-based differences in resveratrol production by Japanese knotweed**

Presented at the Eastern Colleges Science Conference April1, 2017 and at the Mid-Atlantic Ecological Society of America meeting April 22, 2017

8. K. McHale, A. Seman, M. Yatison, K. Hiryak, W.Terzaghi, A. VanWert, D. Lucent. A Synthetic Biology Approach to Treating Calcium Oxalate Kidney Stones. Presented at the Eastern Colleges Science Conference April 1 2017

9. K. McHale, T. Wasiluk, C. Morocho, M. Roueinfar, K. Abraham, L. Bauman, D. Lucent, W. Terzaghi Creating atrazine-resistant Synechococcus elongatus. Presented at the annual meeting of the ASPB in Austin TX, July 9-13, 2016

10. M Yuhas, B Morocho, J Akakpo, XW Deng, W Terzaghi. Studying the Functions of Two Arabidopsis thaliana Noncoding RNAs. Presented at the annual meeting of the ASPB in Austin TX, July 9-13, 2016

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16. L Gunn, G McFarlane, K Margavage, K Sones, M Yatison, K Klemow, D Mencer, W Terzaghi. Studying Resveratrol and Piceid Production by Japanese Knotweed. Presented at the annual meeting of the ASPB in Portland, OR July 12-16, 2014

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19. L Gunn, G McFarlane**,** K Margavage, K Sones, M Yatison, K Klemow, D Mencer, W Terzaghi. Studying Resveratrol and Piceid Production by Japanese Knotweed. Presented at the Spring meeting of the Mid- Atlantic chapter meeting of the ASPB on April 12, 2014

20. W Terzaghi, M Yuhas, B Morocho, G McFarlane, K. Margavage *Using climate change to learn about plants in courses and outreach activities*. Presented at the annual meeting of the ASPB in Providence RI July 20-24, 2013

21. B Morocho, K. Margavage, L Gunn, XW Deng, W Terzaghi. *Differential Gene Expression in Arabidopsis F1 hybrids*. Presented at the annual meeting of the ASPB in Providence RI July 20-24, 2013

22. T Mike, XW Deng, W Terzaghi *Antisense Copies of Light-Regulated Genes in Rice* Presented at U Maryland Plant Biology Symposium on May 23, 2013

23. B Morocho, T Mike, N Joshi, A Patel, LWilliams, XW Deng, W Terzaghi. *Differential Gene Expression in Arabidopsis F1 hybrids* Presented at U Maryland Plant Biology Symposium on May 23, 2013

24. T Mike, XW Deng, W Terzaghi *Antisense Copies of Light-Regulated Genes in Rice* Presented at the Spring meeting of the Mid- Atlantic chapter meeting of the ASPB on April 6, 2013

25. B Morocho, T Mike, N Joshi, A Patel, LWilliams, XW Deng, W Terzaghi. *Differential Gene Expression in Arabidopsis F1 hybrids*. Presented at the Spring meeting of the Mid- Atlantic chapter meeting of the ASPB on April 6, 2013