

Christopher J. Zirkle

College Of Education and Human Ecology
Ohio State University
A468 PAES Building
305 Annie and John Glenn Avenue
Columbus, Ohio 43210
(614) 247-6227
zirkle.6@osu.edu
<https://u.osu.edu/zirkle.6/>

EDUCATION

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|------|---|
| 1995 | <u>Ph.D. in Comprehensive Vocational Education</u> , Ohio State University, Columbus, Ohio. Specialization: Teacher Education. Additional Areas of Study: Educational Leadership, Educational Research/Statistics |
| 1990 | <u>Ed.S. in Educational Leadership</u> , Wright State University, Dayton, Ohio. Areas of Specialization: Curriculum and Instruction and Training/Development |
| 1987 | <u>M.S. in Personnel Counseling and Management</u> , Wright State University, Dayton, Ohio. |
| 1984 | <u>M.A.E. in Technology Education</u> , Ball State University, Muncie, Indiana. |
| 1983 | <u>B.S. in Education</u> , Central State University, Wilberforce, Ohio. Areas of Study: Industrial Technology, Science. |

Teaching and Administrative Licenses (Ohio) – current through June, 2027

<u>Teaching</u>	<u>Administrative</u>
Vocational, Trade & Industrial (Graphic Arts)	Superintendent
K-12 Technology Education	Elementary Principal
General Science	Secondary Principal
	Instructional Supervisor
	Vocational Supervisor

Professional Associations

Association for Career and Technical Education Research
European Research Network on Vocational Education and Training (VETNET)

EXPERIENCE SUMMARY

<u>Present Position</u>	<u>Associate Professor, Workforce Development and Education</u> , College of Education and Human Ecology, Ohio State University, Columbus, OH. Teaching courses in Workforce Development and Education, Career and Technical (vocational) Education, and Human Resource Development. Conducting research in career-technical education and teacher education.
01/2001-08/2007	<u>Assistant Professor</u> , College of Education, Ohio State University, Columbus, OH. Taught courses in Workforce Development and Education, Training and Development, Career and Technical Education, and Human Resource Development. Conducted research in career-technical education and distance education
08/1998-12/2000	<u>Assistant Professor</u> , School of Technology, Indiana State University, Terre Haute, IN. Taught courses in Training and Development, Career and Technical Education, Technology Education and Human Resource Development. Taught courses via distance education. Conducted research in career-technical education and distance education.
08/1997-07/98	<u>Assistant Professor</u> , University of Kentucky, College of Education, Dept. of Administration and Supervision, Lexington, KY. Taught graduate courses in Personnel Administration, Computer Applications for School Administration, Organizational Behavior and School Program Collaboration. Supervised Principal Interns. Conducted research in Educational Administration.
07/1994-07/1997	<u>Assistant Director/Director</u> , Fairfield Career Center, Carroll, OH. Responsible for management/supervision of instructional staff in trade/industrial education and applied academics. Administrator of program planning, curriculum and budgets. Coordinator for building safety/health/OSHA regulations. Responsible for building-wide discipline and attendance programs.
08/1991-06/1994	<u>Vocational Graphic Arts Instructor</u> (Trade and Industrial Education), Ohio Hi-Point Joint Vocational School, Bellefontaine, OH. Taught Junior and Senior vocational programs in Graphic Arts. Responsible for program planning, curriculum, budgeting and lab management/maintenance.
03/1992-05/1994	<u>Industrial Trainer</u> , Honda of America, Marysville, OH. Conducted technical training in Technical Math/Measurement and Blueprint Reading through a contractual agreement with Ohio Hi-Point JVS.
07/1990-08/91	<u>Manager</u> , Center for Human Resource Development, Clark State Community College, Springfield, OH. Acted as liaison between small businesses and government technical assistance networks. Designed customized training and development programs for business/industry.
08/1984-06/1990	<u>Technology Education Teacher</u> , Springfield City Schools, Springfield, OH. Taught Technology Education courses at middle & high school (grades 6-12).

HONORS AND AWARDS

2023	Visiting Scholar Award, National Taipei University of Technology
2021-22	Fulbright Scholar Award, Fulbright Finland Foundation, served as a Fulbright Scholar at Haaga-Helia University of Applied Sciences, Helsinki, Finland
2020-21	Fulbright Scholar Award, Fulbright Finland Foundation (awarded but unable to serve due to pandemic)
2016	Guest Researcher, University of Cologne (Germany)
2015	Visiting Scholar, Beijing Normal University (China)
2014	Meritorious Service Award, University Council for Workforce and Human Resource Education
2012	National Service Award, Omicron Tau Theta (National CTE Honor Society)
2010-11	Visiting Scholar Award, Nagoya University (Japan)
2005	Distinguished Service Award, OSU College of Education
2004	Outstanding Journal Article Award, American Vocational Education Research Association (AVERA)

PUBLICATIONS

Monographs or Bulletins

Peer Reviewed:

Zirkle, C., & Plasman, J. (2021). *Vocational/career and technical education* (4th ed.) New York: Oxford Bibliographies Online, Oxford University Press.

Zirkle, C. (2017). *Vocational and technical education* (3rd ed.) New York: Oxford Bibliographies Online, Oxford University Press.

Zirkle, C., & Martin, L. (2014). *Vocational and technical education* (2nd ed.) New York: Oxford Bibliographies Online, Oxford University Press.

Zirkle, C., & Martin, L. (2011). *Vocational and technical education*. New York: Oxford Bibliographies Online, Oxford University Press.

Zirkle, C., Martin, L., & McCaslin, N.L. (2007). *Study of state certification/licensure requirements for secondary career and technical education teachers*. St. Paul, MN: University of Minnesota, National Research Center for Career and Technical Education.

Alfeld, C., Stone, J. R., Aragon, S. R., Hansen, D.M., Zirkle, C., Connors, J., Spindler, M., Romine, R. S., & Woo, H.J. (2007). *Looking inside the black box: The value added by Career and Technical Student Organizations to students' high school experience*. St. Paul, MN: University of Minnesota, National Research Center for Career and Technical Education.

Zirkle, C. (2003). *Distance education: The state of the art in career and technical education*. Columbus, OH: National Council for Workforce Education.

Logan, J., & Zirkle, C. (1998). *Kentucky tech prep: Serving all students through school, community and business partnerships*. Lexington, KY: Kentucky Department of Education.

Chapters in edited books

Peer reviewed:

Zirkle, C. (2021). Trends and issues in career and technical education in the United States. In: Lee, Y., Lee, L.S. (Eds.), *Trends and issues in international technical and vocational education in the Indo-Pacific region*. Taipei, Taiwan: Wu-Nan Books (Funded by the Technological and Vocational Education Research Center, National Taiwan Normal University)

Pilz, M., Harris, R., Zenner-Hoffkes, L., & Zirkle, C. (2020). Undertaking comparative VET research in international teams: The example of exploring recruitment and training cultures in SMEs in Australia, Germany and the United States. In: Pilz, M., Li, J. (Eds.), *Comparative vocational education research: Enduring challenges and new ways forward*. Cham, Switzerland: Springer.
https://doi.org/978-3-658-29924-8_17

Zirkle, C. (2018). Vocational teacher preparation in the United States. In: McGrath S., Mulder M., Papier J., Suart R. (Eds.), *Handbook of vocational education and training: Developments in the changing world of work*. Cham, Switzerland: Springer. doi: https://doi.org/10.1007/978-3-319-49789-1_31-1

Zirkle, C., & Jeffery, J. (2018). Vocational student organizations and student success. In: McGrath S., Mulder M., Papier J., Suart R. (Eds.), *Handbook of vocational education and training: Developments in the changing world of work*. Cham, Switzerland: Springer. doi: https://doi.org/10.1007/978-3-319-49789-1_68-2

Zirkle, C. (2016). A qualitative analysis of high school level vocational education in the United States: Three decades of positive change. In M. Pilz (Ed.), *Youth in transition: Vocational education and training in times of economic crisis*. New York: Springer.

Zirkle, C., & Martin, L. (2012). Challenges and opportunities for technical and vocational education and training (TVET) in the United States. In M. Pilz (Ed.), *The future of vocational education and training in a changing world*, (pp. 9-24). New York: Springer.

Zirkle, C. (2011). The multi-tiered CTE/VET system in the United States – from high school to four year colleges. In F. Rauner & A. Barabasch (Eds.), *Work and education in America: The art of integration* (pp.33-51). New York: Springer.

Zirkle, C., Fletcher, E., Sander, K., & Briggs, J. (2010). Certification and licensure requirements for career and technical educators. In V. Wang (Ed.), *Definitive Readings in the history, philosophy, practice and theories of career and technical education* (pp. 147-166). Hershey, PA: Information Science Reference - IGI Global.

Fletcher, E., & Zirkle, C. (2010). Career and technical education's role in alternative teacher licensure, In V. Wang (Ed.), *Definitive Readings in the history, philosophy, practice and theories of career and technical education* (pp. 103-124). Hershey, PA: Information Science Reference - IGI Global.

Fletcher, E., & Zirkle, C. (2010). Examining the impact of tracking on long-term student outcomes. In V. Wang (Ed.), *Definitive Readings in the history, philosophy, practice and theories of career and technical education* (pp. 191-214). Hershey, PA: Information Science Reference - IGI Global.

Zirkle, C., & Fletcher, E. (2009). Utilization of distance education in career and technical education teacher education. In V. Wang (Ed.), *The handbook of research on e-learning applications for career and technical education: Technologies for vocational training* (pp. 1-13). Hershey, PA: Information Science Reference - IGI Global.

Zirkle, C., & Fletcher, E. (2009). Access barriers experienced by adults in distance education courses and programs. In V. Wang (Ed.), *The handbook of research on e-learning applications for career and technical education: Technologies for vocational training* (pp. 444-454). Hershey, PA: Information Science Reference - IGI Global.

Fletcher, E., & Zirkle, C. (2009). Effects of No Child Left Behind on career and technical education. In V. Wang (Ed.), *The handbook of research on e-learning applications for career and technical education: Technologies for vocational training* (pp. 495-507). Hershey, PA: Information Science Reference - IGI Global.

Zirkle, C., Parker, E., & McCaslin, N. (2005). The changing state of career and technical education leadership development in the United States. In J. Gregson & J. Allen (Eds.), *Leadership in career and technical education: Beginning the 21st century* (pp. 63-94). Columbus, OH: University Council for Workforce and Human Resource Education.

Zirkle, C. (2000). Conducting a university human resource development degree program through multiple technology delivery modes: A case study. In L. Mealy & B. Loller (Eds.), *E-Learning: Expanding the training classroom through technology* (pp.149-155). Austin, TX: International Association for Human Resource Information Management.

Invited:

Zirkle, C. (2009). Distance education: The state of the art in career and technical education. In Rupert Maclean & David N. Wilson (eds.), *International handbook of education for the changing world of work: Bridging academic and vocational learning (UNESCO/UNEVOC)* (pp.2003-2018). Berlin: Springer Science & Business Media.

Zirkle, C. (2004). The school-to-work transition process of students in high school in the United States. In M. Terada (ed.), *The international comparison about career development and the mechanism of employment: Transition from school to work in Japan, Germany, the United States and the People's Republic of China* (pp. 218-238).Kyoto, Japan: Koyo-Shobo Publishing (Book was published in Japanese).

Bulletins and technical reports

Zirkle, C. (2001). *Access barriers to distance education perceived by inservice and preservice career and technical education majors*. ERIC Document Reproduction Service No. ED473 768

Zirkle, C. (2001). *Using the Internet in trade and industrial education*. ERIC Document Reproduction Service No. ED455 390

Zirkle, C. (2000). *Conducting a university career and technical education degree program through multiple technology delivery formats: A working model*. ERIC Document Reproduction Service No. ED450 271

Zirkle, C., & Ourand, D. (1999). *Teaching a course through multiple delivery systems: Some lessons learned*. ERIC Document Reproduction Service No. ED435 800

King, A., & Zirkle, C. (1993). *Applied art in trade and industrial education*. ERIC Document Reproduction Service No. ED366 752

Peer (Blind) Reviewed Journal Articles

Zirkle, C., Smeplass, E. & Leraand, A. (2024). VET Teacher Training: A Comparison of University Programs in the U.S. and Norway. *International Journal of Vocational Education Studies*, 1(2), 11-34. <https://doi.org/10.14361/ijves-2024-010202>

Smeplass, E., Hylander, L., & Zirkle, C. (2024). Roles of science and research in vocational teacher preparation: A case study from a Norwegian VET teacher programme. *Nordic Journal of Vocational Education and Training*, 14(3), 1–26. <https://njvet.ep.liu.se/article/view/5091>

Zirkle, C., & Thompson, C. (2023). The status of CTE administrative leadership requirements and programs: An ongoing examination. *Career and Technical Education Research*, 48 (2), 2-18. <https://doi.org/10.5328/cter48.2.2>

Quayson, F., & Zirkle, C. (2023). A 5-week personalized training workshop to assess and evaluate faculty members teaching online. *Journal of Research Initiatives*, 7(2). <https://digitalcommons.uncfsu.edu/jri/vol7/iss2/5/>

Zirkle, C., Laukia, J., Mauffret, D., & Prudent-Vilches, S. (2022). A comparative examination of vocational education teacher qualifications and preparation between Finland and the state of Ohio in the United States. *Journal of Research in Technical Careers*, 6 (2). <https://doi.org/10.9741/2578-2118.1117>

Quayson, F., & Zirkle, C. (2022). Practical leadership in implementing online education programs. *Journal of Research Initiatives*, 6 (3)

Quayson, F., & Zirkle, C. (2022). Ten best practices for designing an online course. *The Interdisciplinary Journal of Advances in Research in Education*, 5(1). 1-17. <https://doi.org/10.55138/oh104284fcz>

Zenner, L., Harris, R., Zirkle, C., & Pilz, M. (2021, May). Employability skills: a comparative study of the expectations of employers recruiting young people in Germany, Australia and the United States. *International Journal of Training and Development*. <https://doi.org/10.1111/ijtd.12214>

Zhang, H., & Zirkle, C. (2020). American alternative vocational teacher license: Experience and enlightenment. *Communication of Vocational Education*, 8, 97-105. (written in English, translated and published in Chinese journal).

Popovich, J., Loibl, C., Zirkle, C., & Whittington, S. (2020). Community college students' response to a financial literacy intervention: An exploratory study. *International Review of Economics Education*. <https://www.sciencedirect.com/science/article/abs/pii/S1477388020300098?via%3Dihub>

Jeffery, J., & Zirkle, C. (2020). Perceptions of levels of preparedness of alternatively licensed career and technical education teachers in the state of Ohio. *Online Journal of Workforce Education and Development*, 10 (1) <https://opensiuc.lib.siu.edu/ojwed/vol10/iss1/2/>

Zirkle, C., Jeffery, J., & Schrewe, L. (2019). A longitudinal study of alternatively licensed career-technical teachers. *Career and Technical Education Research*, 44 (1), 35-49.

Keller, A., Zirkle, C., & Barabasch, A. (2019). Focal points of VET teacher training: A comparison of VET teacher education in the USA and Switzerland. *Compare: A Journal of Comparative and International Education*. <https://doi.org/10.1080/03057925.2019.1682519>

Zirkle, C., & Jeffery, J. (2017). Career and technical education administration: Requirements, certification/licensure, and preparation. *Career and Technical Education Research*, 42 (1), 21-33.

Zirkle, C. (2017). The use of work-based learning experiences in U.S. colleges and universities: A discussion and case study. *Journal of the Research on Lifelong Learning and Career Education*, 13 (1), 37-45.

Fletcher, E., Asunda, P., Gordon, H., & Zirkle, C. (2015). A 2015 status study of career and technical education programs in the United States. *Career and Technical Education Research*, 40 (3), 191-211.

Zirkle, C. (2012). Career guidance and counseling for secondary students in the United States. *Journal of Research on Lifelong Learning and Career Education*, 8 (1), 1-6.

Fletcher, E., & Zirkle, C. (2009). The relationship of high school curriculum tracks to degree attainment and occupational earning. *Career and Technical Education Research*, 34 (2), 81-102.

Mosholder, R., & Zirkle, C. (2007). Historical trends of articulation in America: A review of the literature. *Community College Journal of Research and Practice*, 31 (9), 731-745.

Zirkle, C., Norris, C., Winegardner, A., & Frustaci, E. (2006). Distance education programming barriers in business education teacher education programs in the United States. *Career and Technical Education Research*, 31 (2), 101-118.

Kim, H., & Zirkle, C. (2006). The status of career and technical education and workplace opportunity for the disabled in South Korea: A literature review. *Workforce Education Forum* 33 (2), 33-48.

Zirkle, C., Brenning, J., & Marr, J. (2006). An Ohio model for articulated teacher education. *Community College Journal of Research and Practice*, (30), 501-512.

Zirkle, C., & Winegardner, A. (2005). A retention study of career-based intervention teachers in Ohio. *Journal of Career and Technical Education*, 22 (1), 55-68.

Randall, M., & Zirkle, C. (2005). Information technology student-based certification in formal education settings: Who benefits and what is needed. *Journal of Information Technology Education*, (4), 287-306.

Zirkle, C. (2005). Web enhanced alternative teacher licensure. *The Teacher Educator*, 40 (3), 208-219.

Zirkle, C., Marr, J., & Brenning, J. (2005). 2+2 for teacher education: A tale of two large urban educational institutions. *Ohio Association of Two-Year Colleges Journal*, (30), 28-32.

Zirkle, C. (2004). Distance education programming barriers in career and technical teacher education in Ohio. *Journal of Vocational Education Research*, 29 (3), 157-179.

Zirkle, C. (2004). The school-to-work transition process of students in high school in the United States. *Bildung und Erziehung*, 57 (2), 195-213. Published in Germany

Zirkle, C. (2004). Utilization of distance education in two-year colleges: Implications for technical education. *American Technical Education Association (ATEA) Journal*, 31 (2), 12-14.

Zirkle, C. (2003). Distance education and career and technical education: A review of the research literature. *Journal of Vocational Education Research*, 28 (2), 161-181.

Zirkle, C., & Connors, J. (2003). The contribution of career and technical student organizations (CTSO) to the development and assessment of workplace skills and knowledge: A literature review. *Workforce Education Forum*, 30 (2), 15-26.

Zirkle, C. (2002). Leadership in high schools: An examination of career and technical education. *The AASA Professor*, 25 (4), 22-26.

Zirkle, C. (2002). Utilizing the Internet and web enhancements in the preparation of technical instructors. *American Technical Education Association (ATEA) Journal*, 30 (1), 14-16.

Zirkle, C. (2002). Distance education and the trade and industry educator. *TechDirections*, 62 (4), 32-36.

Zirkle, C. (2002). Identification of distance education barriers for trade and industrial teacher education. *Journal of Industrial Teacher Education*, 40 (1), 20-44.

Zirkle, C. (2001). Access barriers in distance education. *Contemporary Education* 72 (2), 39-42.

Zirkle, C., & Cotton, S. (2001). Where will future leadership come from? On the status of career & technical education administration. *TechDirections*, 61 (5), 15-18.

Zirkle, C. (2000). Preparing technical instructors through multiple delivery systems: A working model. *T.H.E. Journal*, 28 (4), 62-68.

Zirkle, C. (1999). Is school-to-careers making the grade? *Academic Exchange Quarterly*, 3 (4), 115-119.

Zirkle, C., & Shoemaker, H. (1999, November-December). Indiana State's multiple delivery approach: Integrating industrial technology education with educational technology. *The Technology Source*. [Online]. Available: <http://horizon.unc.edu/Ts/cases/1999-11.asp>

Zirkle, C. (1998). Perceptions of vocational educators and human resource/training and development professionals regarding skill dimensions of school-to-work transition programs. *Journal of Vocational and Technical Education*, 15 (1), 50-62.

Zirkle, C. (1998). Vocational administration requirements, certification and preparation. *Journal of Vocational Education Research*, 23 (3), 239-251.

Editor Reviewed Journal Articles

Zirkle, C., & Laukia, J. (2022, October). *CTE teacher education: A Finnish model. Techniques*, 12-13.

Zirkle, C. (2017). Ten strategies to reduce legal troubles. *Technology and Engineering Teacher*, 77 (2), 27-29.

Zirkle, C. (2017). An introduction to liability for technology and engineering teachers. *Technology and Engineering Teacher*, 76 (7), 40-41.

Zirkle, C. (2016). Student safety and liability: A primer for career-technical and technology education instructors. *TechDirections*, 76 (4), 16-19.

Zirkle, C. (2014). Classroom/laboratory handbook keeps track of the essentials. *TechDirections*, 73 (9), 24-26.

Zirkle, C. (2013). Guidelines for maintaining the CTE and technology education lab. *TechDirections*, 73 (4), 13-14.

Zirkle, C. (2013). Tool and supply management. *TechDirections*, 72 (10), 22-24.

Zirkle, C. (2013). Don't let legal issues get you in hot water! A safety and liability primer. *TechDirections*, 72 (6), 17-23.

Zirkle, C. (2004). Integrating occupational and academic skills across the curriculum. *Techniques*, 79 (6), 24-26.

Zirkle, C. (2003). Course web site enhances classroom. *Kappa Delta Pi Record*, 39 (2), 91-93.

- Zirkle, C. (2002). Using the Internet to enhance teacher education. *Techniques*, 77 (5), 24-25.
- Zirkle, C. (2002). Creating a course web site to enhance on-campus instruction. *School of Physical Activity and Educational Services Instructional Enhancement Initiative*. [Online]. Available: <http://ehe.osu.edu/paes/downloads/pti/Newsletters/springnewsletterll.pdf>
- Zirkle, C. (2002). Teacher bashing. *Techniques*, 77 (7), p.60.
- Zirkle, C. (2000). An Internet guide to school-to-careers information. *Academic Exchange Quarterly*, 4 (2), p.125.
- Zirkle, C. (2000). Distance education/technical education: Too far apart? *ATEA Journal*, 28 (1), p. 30.
- Zirkle, C. (2000). Bringing IT into the classroom. *Techniques*, 75 (7), p.15.
- Zirkle, C., & Guan, S. (2000). The journey into distance education. *Techniques*, 75 (5), 18-21.
- Zirkle, C. (2000). Preparing technical instructors through multiple delivery systems: A working model. *EDUTECH Report*, 16 (9), pp. 1, 3 6-7. (Reprinted from *T.H.E. Journal*, 28 (4), 62-68.)
- Zirkle, C. (1999). Successful school-to-careers practices. *Academic Exchange Quarterly*, 3 (2), p. 53.
- Zirkle, C. (1999). Don't just sit there, defend school-to-work. *Techniques*, 75 (1), p. 62.
- Zirkle, C. (1999). A primer on teacher liability. *Tech Directions*, 59 (1), 32-34.
- Walker, T., & Zirkle, C. (1999). Certifying T&I teachers. *Techniques*, 74 (5), p. 44.
- Zirkle, C. (1998). Vocational administrators: An endangered species? *Techniques*, 73 (1), p.74.

Papers in Proceedings

Invited:

Zirkle, C. (2023, November). *Post-pandemic challenges and opportunities for career and technical education in the United States*. Paper presented at the 2023 International Conference of Technology and Vocational Education, Taipei, Taiwan (virtual presentation).

Zirkle, C. (2016, October). *The use of work-based learning experiences in U.S. colleges and universities: A discussion and case study*. Paper presented at International Conference on Work-Based Learning, Okayama, Japan, Okayama University.

Zirkle, C. (2011, July). *Challenges of career education, career guidance and counseling in high school and careers of students: The United States perspective*. Paper presented at International Intensive Workshop on Career Guidance and Education of High School Students in the Six Countries, Nagoya, Japan.

Zirkle, C. (2003, October). *The school-to-work transition process of students in high school in the United States*. Paper presented at International Workshop for the Comparison on the Process and Mechanism of Career Development and Education, Nagoya, Japan.

Peer-reviewed:

Zirkle, C. (2019, March). *Retention of vocational teachers in the United States: A longitudinal case study of one university*. Proceedings of the Sixth Congress on Research in Vocational Education and Training. Bern, Switzerland: Swiss Federal Institute for Vocational Education and Training

Zirkle, C., & Jeffery, J. (2018, November). *A longitudinal study of alternatively licensed career-technical teachers*. Paper presented at the Career and Technical Education Research and Professional Development Conference, San Antonio, TX.

Jeffery, J., & Zirkle, C. (2018, November). *Perceptions of levels of preparedness of alternatively licensed career and technical education teachers completing an assessment for licensure*. Paper presented at the Career and Technical Education Research and Professional Development Conference, San Antonio, TX.

Harvey, M., Fleck, J., Threeton, M., Zirkle, C., Kotamraju, P., & Biggerstaff, P. (2018, November). *CTE leadership: Toward a core set of knowledge and skill competencies in Pennsylvania and beyond*. Symposia presented at the Career and Technical Education Research and Professional Development Conference, San Antonio, TX.

Harris, R., Zenner, L., & Zirkle, C. (2018, September). *Employability skills: a comparative study of the expectations of employers recruiting young people in Germany, Australia and the United States*. Paper presented at the German Research Center for Comparative Vocational Education and Training Conference, Cologne, Germany.

Pellock, C., Zirkle, C., Self, M.J., Kraemer, K., & Stange, L. (2017, November). *Maintaining CTE teacher quality and quantity*. Symposium at the Career and Technical Education Research and Professional Development Conference, Nashville, TN.

Zirkle, C. (2017, March). *Articulation and transfer in career and technical (vocational) education for career progress: A U.S. case study of a community college and a research university in an urban setting*. Proceedings of the *Fifth Congress on Research in Vocational Education and Training*. Bern, Switzerland: Swiss Federal Institute for Vocational Education and Training.

Zirkle, C., & Jeffery, J. (2015, November). *Career-technical education administration: Requirements, certification/licensure, and preparation*. Proceedings of the *49th Annual Career and Technical Education Research and Professional Development Conference*. New Orleans: Association for Career-Technical Education Research.

Fletcher, E., & Zirkle, C. (2008, December). *Alternative teacher licensure reexamined: Addressing a misconception regarding its conception*. Proceedings of the Career and Technical Education Research Conference, Charlotte, NC.

Zirkle, C., Norris, C., Winegardner, A., & Frustaci, E. (2006, November). *Distance education programming barriers in business education teacher education programs in the United States*. Proceedings of the Career and Technical Education Research Conference, Atlanta, GA.

Zirkle, C., Martin, L., & McCaslin, N.L. (2006, November). *Study of state certification/licensure requirements for secondary career and technical education teachers*. Proceedings of the Career and Technical Education Research Conference, Atlanta, GA.

Zirkle, C., Parker, E., & McCaslin, N.L. (2006, November). *Career and technical education leadership development*. Proceedings of the Career and Technical Education Research Conference, Atlanta, GA.

Zirkle, C., & Winegardner, A. (2005, December). *A retention study of career-based intervention teachers in Ohio*. Proceedings of the Career and Technical Education Research Conference, New Orleans, LA.

Kim, H., & Zirkle, C. (2005, December). *The relationship of career and technical education and workplace efficacy of the disabled in South Korea: A review of the literature*. Proceedings of the Career and Technical Education Research Conference, New Orleans, LA.

Kong, Y., & Zirkle, C. (2005, December). *The failure of early e-learning*. Proceedings of the 4th Asian Conference of the Academy of Human Resource Development, Taipei, Taiwan.

Kim, H., & Zirkle, C. (2005, October). *New pathways in the workplace and career technical education for the disabled in Korea*. Paper presented at the annual meeting of the Mid-Western Educational Research Association, Columbus, OH. (abstracts of final papers were published)

Zirkle, C. (2004, October). *Access barriers experienced by adults in distance education courses and programs: A review of the research literature*. Indianapolis, IN: Proceedings of the Midwest Research-to-Practice Conference.

Zirkle, C. (2003, December). *Distance education and career and technical education: A review of the research literature*. Orlando, FL: Proceedings of the American Vocational Education Research Association Annual Meeting.

Zirkle, C. (2003, October). *Utilization of distance education in career & technical education: Current and future implications*. Paper presented at the annual meeting of the Mid-Western Educational Research Association, Columbus, OH. (abstracts of final papers were published)

Zirkle, C. (2001, December). *Access barriers to distance education experienced by preservice career and technical education majors*. Proceedings of the American Vocational Education Research Association Annual Meeting, New Orleans, LA.

Zirkle, C. (2001, November). *Instructional quality in web-based learning: Some suggestions for success*. Paper presented at 3rd annual Technology Enhanced Learning and Research (TELR) conference. The Ohio State University, Columbus, OH.

Unpublished Scholarly Presentations

International

Zirkle, C. (2024, November) *The changing landscape of vocational education in the United States: Moving in positive directions*. Presented at the 20th annual conference of the Asian Academic Association for Vocational education and Training, Shanghai, China.

Zirkle, C. (2024, October). *Improving vocational teaching: Planning, curriculum, instruction and assessment: The Ohio State University model*. Presented at the annual meeting of the Shanghai Institute for Teacher Education.

Thompson, C., & Zirkle, C. (2024, October) *The changing landscape of career and technical education in the United States: Moving in positive directions*. Presented at the 9th Sino-European Workshop on TVET Research, Tongji University, Shanghai, China

Zirkle, C., Leraand, A., & Smeplass, E. (2024, June). *VET teacher training: A comparison of university programs in the U.S. and Norway*. Presented at the

Annual Conference of the Nordic Research Network on Vocational Education and Training (NordYrk), Reykjavik, Iceland.

Zirkle, C. (2023, November). *Post-pandemic challenges and opportunities for career and technical education in the United States*. Paper presented at the 2023 International Conference of Technology and Vocational Education, Taipei, Taiwan (virtual presentation).

Smeplass, E., & Zirkle, C. (2023, June). *Participation through vocational education and training: Comparing the Norwegian and Ohio systems*. Presented at the Annual Conference of the Nordic Research Network on Vocational Education and Training (NordYrk), Bergen, Norway.

Zirkle, C. (2023, April). *Roles and cooperation between secondary schools, community/technical colleges, universities and companies in the development of career pathway curriculum*. Presented at the World Vocational and Technical Education Development Conference, Shanghai, China (held virtually).

Plasman, J., & Zirkle, C. (2022, September). *Informal work-based learning in the United States*. Presented at the 4th International German Research Center for Comparative Vocational and Training conference, Cologne, Germany.

Zirkle, C. (2022, August). *Transforming the student experience: A second-year mentoring program*. Presented at Pedaforum 2022: Days of Higher Education Pedagogy, Helsinki, Finland.

Zirkle, C. (2022, August). *Roles and cooperation between secondary schools, community/technical colleges, universities and companies in the development of career pathway curriculum*. Presented at the World Vocational and Technical Education Development Conference, Shanghai, China (held virtually).

Zirkle, C. (2022, June). *Recent trends and issues in vocational education in the United States and their effects on vocational teachers: A qualitative analysis*. Presented at the Annual Conference of the Nordic Research Network on Vocational Education and Training (NordYrk), Norrköping, Sweden.

Zirkle, C. (2022, February). *An analysis of the 2018 U.S. federal legislation on career and technical education and its impacts on policy and practice in vocational education and training in the United States*. Presented at the 7th International Vocational Education and Training Congress, Bern, Switzerland (held virtually).

Zirkle, C. (2021, September). *Business and industry professionals entering teaching as a second career: A case study*. Presented at the European Conference on Educational Research, Geneva, Switzerland (held virtually).

Zirkle, C. (2020, November). *Vocational-technical education in the United States*. Presented at the 7th International Conference on Vocational and Technical Education and Training, Padang State University, Padang, Indonesia (Virtual Conference).

Zirkle, C. (2019, December). *The recent reform and modernization of career and technical education (vocational education) in the United States*. Presented at the International Forum on Vocational Education Modernization, Nantong, China.

Zirkle, C. (2018, December). *Current curricular and instructional practices in VET in the United States*. Keynote speech at The International Conference on Flipped Learning for Technological and Vocational Education, Taipei, Taiwan.

Zirkle, C. (2015, May). *An analysis of the workforce development and education (WDE) system in the United States*. Paper presented at Beijing Academy of Educational Sciences, Beijing, China.

Zirkle, C. (2015, May). *The U.S. two-year college system*. Paper presented at Beijing Academy of Educational Sciences, Beijing, China.

Zirkle, C. (2015, February). *Schools and American Society*. Presented at the conference - Special Training to Broaden Teachers' International Vision, Shanghai, China.

Zirkle, C., (2015, February). *The U.S. Two-Year College System*. Presented at the conference - Special Training to Broaden Teachers' International Vision, Shanghai, China

Zirkle, C. (2015, February). *The U.S. Vocational Education System*. Presented at the conference - Special Training to Broaden Teachers' International Vision, Shanghai, China.

Zirkle, C. (2014, September). *A qualitative analysis of high school vocational education in the U.S.* Paper presented at 2nd International Conference of the German Research Center for Comparative Vocational Education and Training, The University of Cologne, Cologne, Germany.

Zirkle, C. (2013, May). *The recent reform of vocational education in the United States*. Paper presented at the 2013 International Language Education Conference. Transworld University, Yunlin, Taiwan.

Zirkle, C. (2012, December). *An analysis of the workforce development and education system in the U.S.* Paper presented at the 2012 International Conference on Industrial Workforce Development & Education in the Asia-Pacific Region, Cheonan, Korea

Zirkle, C. (2010, December). *Introduction to career and technical education in the United States*. Paper presented at the Annual Meeting of the Japan Society for the Study of Vocational and Technical Education, Nagoya, Japan.

Zirkle, C. (2010, September). *Challenges and opportunities for technical-vocational education in the U.S.* Paper presented at the International Conference on the Future of Technical-Vocational Education in a Changing World, The University of Cologne, Germany.

Zirkle, C. (2010, September). *Initial and further education strategies for technical-vocational education teachers and trainers in the U.S.* Paper presented at the UNESCO-UNEVOC Conference on Technical-Vocational Education, The University of Magdeburg, Germany.

Zirkle, C. (2003, October). *The school-to-work transition process of students in high school in the United States*. Paper presented at International Workshop for the Comparison on the Process and Mechanism of Career Development and Education, University of Nagoya, Japan.

National

Whittington, S., Tietje, C., Black, C., Zirkle, C., & Kapusta, R. (2022, June). *STEP: Faculty mentoring students - Ohio State's second-year student support in action*. Presented at the annual meeting of the North American Colleges and Teachers of Agriculture, Wooster, Ohio.

Zirkle, C. (2021, July). *Theory meets practice: How apprenticeship connects with adult learning*. Presented at the Independent Electrical Contractor National Instructor Conference, Pittsburg, PA.

Zirkle, C. (2020, July). *The roles of the technical instructor*. Presented at the Independent Electrical Contractor Virtual Instructor Conference, Pittsburg, PA

Zirkle, C. (2020, July). *Teaching adults: Some insights*. Presented at the Independent Electrical Contractor Virtual Instructor Conference, Pittsburg, PA

Zirkle, C. (2020, February). *The future of CTE teacher preparation*. Presented at TEACH CTE: A National Teacher Recruitment and Retention Summit, Fort Lauderdale, FL.

Pellock, C., Adams, E., Jordan, J., & Zirkle, C. (2013). *Teacher evaluation changes and their implications for CTE teacher preparation programs*. Paper presented at the annual Association for Career and Technical Education Research Conference, Las Vegas, NV.

Saunders, C., & Zirkle, C. (2013). Career and technical education issues among students of Native American tribal colleges and universities. Paper presented at American Educational Research Association, San Francisco CA.

Zirkle, C., & Fletcher, E. (2007). *From alternative licensure to the Ph.D.: A strategy for developing quality CTE teachers*. Paper presented at the annual Association for Career and Technical Education conference, Las Vegas, NV.

Connors, J., Zirkle, C., Alfeld, C., Stone, J. R., Hansen, D.M., & Aragon, S. R. (2006). *Civic engagement and leadership development of career and technical student organization members*. Paper presented at the annual American Educational Research Association (AERA) conference, San Francisco, CA.

Alfeld, C., Stone, J. R., Hansen, D.M., Aragon, S. R., Zirkle, C., Connors, J., Spindler, M., & Woo, H.J. (2006). *The value added by career and technical student organizations to students' high school experience*. Paper presented at the annual American Educational Research Association (AERA) conference, San Francisco, CA.

Zirkle, C., & Brenning, J. (2005, December). *A community and technical college partnership for teacher preparation: The Ohio State model*. Paper presented at the annual Association for Career and Technical Education conference, New Orleans, LA.

Senger, B., & Zirkle, C. (2005, December). *Improving the academic success of urban Appalachian CTE students*. Paper presented at the annual Association for Career and Technical Education conference, New Orleans, LA.

Randall, M., & Zirkle, C. (2004, December). *Deciding between vendor-specific and vendor-neutral information technology curriculum: Guidelines for administrators and teachers*. Paper presented at the annual Association for Career and Technical Education conference, Las Vegas, NV

Randall, M., & Zirkle, C. (2004, October). *Digital storytelling: A strategy for building community involvement and improving student participation and achievement through the use of multimedia*. Paper presented at the National School Boards Association Technology Teaching and Learning Conference.

Hall, H., Cotton, S., & Zirkle, C. (2004, October). *Alternative strategies for delivering teacher preparation*. Paper presented for the National Dissemination Center for Career and Technical Education, The Ohio State University, Columbus, OH.

Benson, A., Johnson, S., & Zirkle, C. (2003, December). *Distance education's presence in career and technical education*. Paper presented at the annual Association for Career and Technical Education conference, Orlando, FL.

Randall, M., & Zirkle, C. (2003, December). *Pre-packaged web-based curriculum and potential issues that merit concern*. Paper presented at the annual Association for Career and Technical Education conference, Orlando, FL.

Zirkle, C. (2003, March). *Using the Internet to improve technical teacher preparation & professional development*. Paper presented at the annual American Technical Education Association conference, Orlando, FL.

Zirkle, C. (2003, February). *Ohio career and technical teacher education and distance education*. Paper presented at the annual National Career and Technical Teacher Education Institute, Scottsdale, AZ.

Zirkle, C. (2002, December). *Connecting academics and technology in career and technical education*. Paper presented at the annual Association for Career and Technical Education conference, Las Vegas, NV.

Zirkle, C. (2002, December). *Safety and liability issues in trade and industrial education*. Paper presented at the annual Association for Career and Technical Education conference, Las Vegas, NV.

Zirkle, C., & Connors, J. (2002, December). *contributions of career and technical student organizations to the development and assessment of workplace skills and knowledge: A literature review*. Paper presented at the annual Association for Career and Technical Education conference, Las Vegas, NV.

Zirkle, C. (2002, June). *Distance education and career and technical education: A good match?* Paper presented for the National Dissemination Center for Career and Technical Education, The Ohio State University, Columbus, OH

Zirkle, C. (2001, December). *Utilizing the Internet in trade and industrial education*. Paper presented at the annual Association for Career and Technical Education conference, New Orleans, LA.

Zirkle, C. (2000). *Conducting a university trade and industrial education degree program through multiple technology delivery formats: A working model*. Paper presented at the annual Association for Career and Technical Education conference, San Diego, CA.

Zirkle, C. (1999). *Indiana's partnership for trade and industrial education*. Paper presented at the annual Association for Career and Technical Education conference, Orlando, FL.

State

Zirkle, C., & Landversicht, E. (2019, July). *New CTE licensure standards: A primer for administrators*. Presented at the Ohio Association for Career and Technical Education annual conference, Columbus, OH.

Zirkle, C. (2015, July). *Developing a classroom/lab handbook*. Paper presented at Ohio Association for Career-Technical Education annual conference, Columbus, OH.

Zirkle, C. (2015, March). *Keeping yourself out of hot water.... or... the numerous things teachers do to get themselves in trouble*. Paper presented at Future Educators Association Conference, Ohio Dominican University, Columbus, OH.

Pinchak, J., & Zirkle, C. (2015, February). *Career-technical teacher licensure and STEM programming*. Paper presented at the Career-Technical Education and STEM Conference, Clark State Community College, Springfield, OH.

Briggs, J., & Zirkle C. (2009, July). *Perceptions of alternatively-licensed career and technical education teachers about teacher mentoring and teacher retention*. Paper presented at the annual Ohio Career and Technical Education conference, Columbus, OH.

Zirkle, C., & Davis, S. (2007, July). *CTE teacher licensure: Policies, procedures & pointers*. Paper presented at the annual Ohio Career and Technical Education conference, Cincinnati, OH.

Pinchak, G.J., & Zirkle, C. (2006, August). Helping first year teachers: Needs, challenges and opportunities. Paper presented at the annual Ohio Career and Technical Education conference, Cincinnati, OH.

Zirkle, C., & Hill, R. (2005, August). *Avoiding issues of liability: Developing a CTE classroom/lab handbook*. Paper presented at the annual Ohio Career and Technical Education conference, Cincinnati, OH.

Zirkle, C., & Brenning, J. (2005, August). *2+2 for teacher education: A tale of two large urban educational institutions*. Paper presented at the annual Ohio Career and Technical Education conference, Cincinnati, OH.

Zirkle, C. (2004, November). *Does DE + CTE = D²?* Paper presented as keynote speaker at the Tennessee Board of Regents, E-Learning Academy, Dickson, TN

Zirkle, C. (2004, May). *Distance education programming barriers in career and technical education teacher education in Ohio*. Paper presented at the Ohio Career and Technical Education Teacher Education Network Meeting, Columbus, OH.

Zirkle, C., & Moore, M. (2003). *Professional development through higher education*. Paper presented at the annual Ohio Adult Workforce Development (AWD) Instructors Conference, Columbus, OH.

Zirkle, C. (2002). *Using technology effectively in career and technical education programs*. Paper presented at the annual Ohio Career and Technical Education conference, Toledo, OH.

Zirkle, C. (2001, August). *The status of career and technical education administration: Where will future leadership come from?* Paper presented at the annual Ohio Career and Technical Education conference, Toledo, OH.

Zirkle, C. (2001, August). *Utilizing the Internet in trade and industrial education*. Paper presented at the annual Ohio Career and Technical Education conference, Toledo, OH.

Zirkle, C. (2000). *Career and technical education administrators: An endangered species?* Paper presented at the annual Indiana Association for Career and Technical Education Administrators Conference, Indianapolis, IN.

Zirkle, C. (1999). *The status of vocational education in Indiana*. Paper presented at the annual Indiana Vocational Association Annual Conference, Indianapolis, IN.

Zirkle, C. (1998). *The status of vocational administration in the United States*. Paper presented at the annual Kentucky Vocational Teacher Conference, Bardstown, KY.

Supervision of Student Research – Doctoral Degrees

Popovich, Jack (2018)

Dissertation: Describing the effects of select digital learning objects on the financial Knowledge, attitudes, and actual and planned behavior of community college students

Occupation: Professor, Columbus State Community College (Ohio)

Priebe, Dennis (2018)

Dissertation: Does perceived wellness influence employee work engagement? Examining the effects of wellness in the presence of established individual and workplace predictor variables

Occupation: Sr. Program Manager, AWS Certification at Amazon Web Services

Jeffery, Jeremy (2017)

Dissertation: The self-reported perceptions of levels of preparedness of alternatively-licensed career and technical education teachers in the State of Ohio completing the resident educator summative assessment

Occupation: Assistant Professor of Business Education, Bloomsburg State University (PA)

Hymes, Jacqueline (2013)

Dissertation: How states are faring in getting people off welfare and back to work under federal policy of the Temporary Assistance to Needy Families Program (TANF)

Occupation: President/CEO, Business Harmony Consultants

Sander, Kristina (2013)

Dissertation: Establishing a model for describing secondary enrollment trends in business education.

Occupation: Central Office Administrator, Olentangy Local Schools (Ohio)

Saunders, Charles (2011)

Dissertation: Native American tribal colleges and universities: Issues and problems impacting students in the achievement of educational goals

Occupation: Adjunct Faculty & Doctoral Faculty Advisor, Franklin University

Fletcher, Edward (2009)

Dissertation: The relationship of high school curriculum tracks to degree attainment and occupational earnings

Occupation: Professor, College of Education and Human Ecology, The Ohio State University

Briggs, Jane (2008)

Dissertation: Perceptions of career and technical education teachers about teacher mentoring and teacher retention

Occupation: Senior Lecturer, College of Education and Human Ecology, The Ohio State University

Randall, Mike (2006)

Dissertation: Information technology certification programs and perceptions of attitude and need by high school principals, information technology teachers, and information technology professionals in Ohio

Occupation: Program Director, Oracle University (Texas)

Funded Research

Principal investigator

- i. *State Requirements for the Certification/Licensure of Secondary CTE Teachers (2006-07)*

The purpose of this study is to develop a nationwide database of certification/licensure requirements for career and technical education teachers. This is a U.S. Department of Education grant awarded via a subcontract through the University of Minnesota.

Total grant award: \$55,070

- ii. *The Value Added by Career and Technical Student Organizations (CTSO's) to Students' High School Experience (2004)*

The purpose of this study was to examine the benefits of participation in Career Tech Student Organizations (CTSO's) with respect to the development and assessment of employability skills or other indicators of student success. This was a U.S. DOE grant collaboration of Ohio State, The University of Illinois and the University of Minnesota. Co-PI was Dr. James Connors in the OSU College of FAES.

Total grant award: \$23,797

Co-investigator

- i. *Transformation of American Rubber through Domestic Innovation for Supply Security: TARDISS (2024-28)*

This project, funded by NSF, will create bridges between engineering, biology, and agriculture, to revolutionize alternative natural rubber (NR) production from domestic crops: guayule, rubber dandelion, and mountain gum.

Total grant award: \$25,300,000

- ii. *Profile and Evaluation of Career and Technical Education Programs in New Jersey High Schools (2004-05)*

The purpose of this study was to conduct an assessment of Career and Technical Education for the State of New Jersey, working in conjunction with the Rutgers University's Center on Workforce Development. Co-PI was Dr. Josh Hawley in the School of Physical Activity and Educational Services.

Total grant award: \$108,484

- iii. *Tech Prep Project (1998)*

This project was funded through the Kentucky Department of Education. The purpose of the research was to determine the academic achievement of participants in secondary Tech Prep programs relative to performance on SAT and ACT standardized tests. The project culminated in a monograph entitled *Kentucky tech prep: Serving all students through school, community and business partnerships*.

Total grant award: \$14,580

Funded training grants

Principal investigator

- i. Reinforcing Instructors for Semiconductor Education (RISE) Consortium (Subaward with Columbus State Community College) (2024-27)

This NSF grant will create a faculty hub to recruit, credential, diversify, and upskill instructors in related disciplines and provide them with the curriculum needed to successfully expand the workforce.

Total grant award: \$184,648

- ii. Ohio Career and Technical Education Teacher Recruitment and Retention Grant (2024-25)

Total grant award: \$102,400

- iii. Ohio Department of Youth Services Career and Technical Education Teacher Education Grant (2024-25)

Total grant award: \$36,595

- iv. Ohio Department of Rehabilitation and Corrections Career and Technical Education Teacher Education Grant (2024-25)

Total grant award: \$111,397

These three grants are awarded to facilitate the maintenance and growth of teacher education programs in career and technical education in the Department of Educational Studies.

- v. Ohio Career and Technical Education Teacher Recruitment and Retention Grant (2023-24)

This project, funded through the Ohio Department of Education, was awarded to facilitate the maintenance and growth of teacher education programs in career and technical education in the Department of Educational Studies.

Total grant award: \$112,000

- vi. Ohio State University Interdisciplinary Innovation Team Development Award (12/2022 – 12/2023)

The seed-funded project will work with local career center administrators to determine professional development needs of technical instructors and how OSU can assist in meeting those needs

Total grant award: \$4,225

- vii. *Additive Manufacturing Materials Safety Training (11/2022 – 06/2023).*
America Makes, sponsor.

This project consolidates existing national and international standards into a format more easily understandable by a non-engineering expert such as an operator or technician. Developed educational materials will be created using proven educational theories and targeted to make an employee safer and more effective when working with additive materials.

Total grant award: \$273,057

- viii. *Ohio Career and Technical Education Teacher Recruitment and Retention Grant (2022-23)*

This project, funded through the Ohio Department of Education, was awarded to facilitate the maintenance and growth of teacher education programs in career and technical education in the Department of Educational Studies.

Total grant award: \$112,000

- ix. *Ohio Career and Technical Education Teacher Recruitment and Retention Grant (2021-22)*

This project, funded through the Ohio Department of Education, was awarded to facilitate the maintenance and growth of teacher education programs in career and technical education in the Department of Educational Studies.

Total grant award: \$112,000

- x. *Ohio Career and Technical Education Teacher Recruitment and Retention Grant (2020-21)*

This project, funded through the Ohio Department of Education, was awarded to facilitate the maintenance and growth of teacher education programs in career and technical education in the Department of Educational Studies.

Total grant award: \$112,000

- xi. *Ohio Career and Technical Education Teacher Recruitment and Retention Grant (2019-20)*

This project, funded through the Ohio Department of Education, was awarded to facilitate the maintenance and growth of teacher education programs in career and technical education in the Department of Educational Studies.

Total grant award: \$112,000

- xii. *Ohio Career and Technical Education Teacher Recruitment and Retention Grant (2018-19)*

This project, funded through the Ohio Department of Education, was awarded to facilitate the maintenance and growth of teacher education programs in career and technical education in the Department of Educational Studies.

Total grant award: \$112,000

- xiii. *Ohio Career and Technical Education Teacher Recruitment and Retention Grant (2017-18)*

This project, funded through the Ohio Department of Education, was awarded to facilitate the maintenance and growth of teacher education programs in career and technical education in the Department of Educational Studies.

Total grant award: \$112,000

- xiv. *Ohio Career and Technical Education Teacher Recruitment and Retention Grant (2016-17)*

This project, funded through the Ohio Department of Education, was awarded to facilitate the maintenance and growth of teacher education programs in career and technical education in the Department of Educational Studies.

Total grant award: \$112,000

- xv. *Ohio Department of Education Career-Based Intervention Grant (2016-17)*

Total grant award: \$10,000

- xvi. *Ohio Career and Technical Education Teacher Recruitment and Retention Grant (2015-16)*

This project, funded through the Ohio Department of Education, was awarded to facilitate the maintenance and growth of teacher education programs in career and technical education in the Department of Educational Studies.

Total grant award: \$112,000

- xvii. *Ohio Department of Education Career-Based Intervention Grant (2015-16)*

Total grant award: \$10,000

xviii. *Shanghai China Teacher Professional Development (2014)*

This project, funded by the Shanghai International Vocational Training and Development Center, funded 12 teachers to participate in a two-week professional development workshop on the Ohio State campus

Total grant award: \$33,214

xix. *Ohio Career and Technical Education Teacher Recruitment and Retention Grant (2014-15)*

This project, funded through the Ohio Department of Education, was awarded to facilitate the maintenance and growth of teacher education programs in career and technical education in the Department of Educational Studies.

Total grant award: \$276,000

xx. *Ohio Corrections Teacher Education (2014-2015)*

This grant facilitates the development of career and technical education teachers for Ohio's adult corrections system. The grant is awarded by the Ohio Department of Rehabilitation and Corrections.

Total grant award: \$185,142

xxi. *Ohio Corrections Teacher Education (2014-2015)*

This grant facilitates the development of career and technical education teachers for Ohio's youth corrections system. The grant is awarded by the Ohio Department of Youth Services.

Total grant award: \$71,520

xxii. *Ohio Career and Technical Education Teacher Recruitment and Retention Grant (2012-13)*

This project, funded through the Ohio Department of Education, was awarded to facilitate the maintenance and growth of teacher education programs in career and technical education in the School of Physical Activity and Educational Services.

Total grant award: \$138,000

xxiii. *Ohio Corrections Teacher Education (2011-2013)*

This grant facilitated the development of career and technical education teachers for Ohio's adult corrections system. The grant was awarded by the Ohio Department of Rehabilitation and Corrections.

Total grant award: \$217, 595

xxiv. *Ohio Corrections Teacher Education (2011-2013)*

This grant facilitated the development of career and technical education teachers for Ohio's youth corrections system. The grant was awarded by the Ohio Department of Youth Services.

Total grant award: \$83,520

xxv. *Ohio Career and Technical Education Teacher Recruitment and Retention Grant (2011-12)*

This project, funded through the Ohio Department of Education, was awarded to facilitate the maintenance and growth of teacher education programs in career and technical education in the School of Physical Activity and Educational Services.

Total grant award: \$138,150

xxvi. *Ohio Career and Technical Education Teacher Recruitment and Retention Grant (2010-11)*

This project, funded through the Ohio Department of Education, was awarded to facilitate the maintenance and growth of teacher education programs in career and technical education in the School of Physical Activity and Educational Services.

Total grant award: \$130,700

xxvii. *Ohio Career and Technical Education Teacher Education Capacity Building Grant (2009-2010)*

This project, funded through the Ohio Department of Education, was awarded to facilitate the maintenance and growth of teacher education programs in career and technical education in the School of Physical Activity and Educational Services.

Total grant award: \$130,700

xxviii. *Ohio Career and Technical Education Teacher Education Capacity Building Grant (2008-2009)*

This project, funded through the Ohio Department of Education, was awarded to facilitate the maintenance and growth of teacher education programs in career and technical education across the College of Education and Human Ecology and the College of Food and Agriculture and Environmental Sciences.

Total grant award: \$172,800

xxix. *Ohio Career and Technical Education Teacher Education Capacity Building Grant (2007-2008)*

This project, funded through the Ohio Department of Education, was awarded to facilitate the maintenance and growth of teacher education programs in career and technical education across the Colleges of Education and Human Ecology and Food and Agriculture and Environmental Sciences.

Total grant award: \$192,000

xxx. *Ohio Career and Technical Education Teacher Education Capacity Building Grant (2006-2007)*

This project, funded through the Ohio Department of Education, was awarded to facilitate the maintenance and growth of teacher education programs in career and technical education across the Colleges of Education and Human Ecology and Food and Agriculture and Environmental Sciences.

Total grant award: \$178,000

xxi. *Associate Degree for Career and Technical Education teachers (2006)*

This project, funded through the Ohio Department of Education, was awarded to fund the development of an associate of arts degree at the OSU regional campuses, with a specialization in career and technical education.

Total grant award: \$8,000

xxii. *Ohio Career and Technical Education Teacher Education Capacity Building Grant (2005-2006)*

This project, funded through the Ohio Department of Education, was awarded to facilitate the maintenance and growth of teacher education programs in career and technical education across the Colleges of Education, Human Ecology and Food, Agriculture and Environmental Sciences.

For 2005-06 a special focus centered on development of articulation agreements for licensure between Ohio's two-year colleges and OSU.

Total grant award: \$178,000

xxiii. *Articulation Partnership for Career Technical Teacher Licensure (2005-06)*

This project, funded through the Ohio Department of Education, is a continuation of a project begun in 2004, awarded to facilitate the development of transfer/articulation guides between the technical education programs at Columbus State Community College and the COE Bachelor of Science program in Technical Education. This grant focused on the development of articulation/transfer guides to allow students to

complete an Associate of Science degree at Central Ohio Technical College, North Central State College and Rhodes State College in a technical field and transfer to OSU to complete a bachelor's degree.

Total grant award: \$20,205

xxiv. Ohio Learning Network (2005)

This project, funded through the Ohio Learning Network, was a planning grant designed to allow for planning and exploration of distance education opportunities for course and program delivery. Funding supported curriculum development, exploration of articulation, and collaboration between the Ohio State College of Education Workforce Development section and OSU branch campuses in Lima, Mansfield and Newark.

Total grant award: \$10,000

xxv. Ohio Career and Technical Education Teacher Education Capacity Building Grant (2004-2005)

This project, funded through the Ohio Department of Education, was awarded to facilitate the maintenance and growth of teacher education programs in career and technical education across the Colleges of Education, Human Ecology and Food, Agriculture and Environmental Sciences.

For 2004-05 a special focus centered on the development of new licensure pathways for career and technical education teachers.

Total grant award: \$160,000

xxvi. Articulation Partnership for Career Tech Teacher Licensure (2004-05)

This project, funded through the Ohio Department of Education, is awarded to facilitate the development of transfer/articulation guides between the technical education programs at Columbus State Community College and the Bachelor of Science degree program in Technical Education. The articulation/transfer guides allow students to complete an Associate of Science degree at Columbus State in a technical field of study and transfer to OSU to complete requirements for a bachelor's degree.

Total grant award: \$22,280

xxvii. Ohio Career and Technical Education Teacher Education Capacity Building Grant (2003-2004)

This project, funded through the Ohio Department of Education, was awarded to facilitate the maintenance and growth of teacher education programs in career and technical education across the university.

A special focus of the grant for 2003-04 was on the development of strategies to assist teachers with the passage of the PRAXIS II

Principles of Learning and Teaching. A one-credit independent study course for this effort was developed as a result.

Total grant award: \$148,000

Co-investigator

- i. *Ohio Department of Job and Family Services, Direct Service Workforce Project: Providing Training and Career Pathways for Ohio's Long-Term Care Workforce (2011-12)*

The purpose of this project is to assemble a team of university human resource development experts to develop an education and credentialing system for direct care service workers. A secondary purpose is to develop the research agenda surrounding the direct care workforce needs of Ohio.

Total grant award: \$497,700

- ii. *Ohio Department of Job and Family Services, Direct Service Workforce Project: Providing Training and Career Pathways for Ohio's Long-Term Care Workforce (2010-11)*

The purpose of this project was to assemble a team of university human resource development experts to develop an education and credentialing system for direct care service workers. A secondary purpose is to develop the research agenda surrounding the direct care workforce needs of Ohio.

Total grant award: \$463,691

- iii. *Ohio Department of Education Career Pathways Implementation Project (2005-07)*

The purpose of this project is to develop career-field pathways through the production of curriculum models that address the scope and sequence of courses/programs based on a career field core and pathway/specialization competencies and embedded Ohio mathematics and English language arts content standards. The project seeks to promote programmatic and instructional improvement in the rigor of career pathways through the development of instructional resources/lessons that support integrated instruction of academic and technical content standards.

Total grant award: \$1,200,000

- iv. *Ohio Learning Network, Emerging Needs Grant (2003-05)*

This grant was awarded to address the critical shortage of school nurses, and to facilitate offering licensure courses on the Internet for potential and practicing school nurses. Funding will enable faculty in PAES to place school nurse licensure courses on the Internet.

Total grant award: \$155,631

v. *Ohio Career and Technical Education Teacher Education Capacity Building Grant (2002-2003)*

This project, funded through the Ohio Department of Education, is awarded to facilitate the maintenance and growth of teacher education programs in career-technical education. A special focus of the grant for 2002-03 was on the development of partnership activities between the colleges of Education, Human Ecology and Food, Agriculture and Environmental Sciences to enhance course offerings and collaboration.

Total grant award: \$185,000

Service as a Grant Reviewer

- U.S. Department of Education, Institute for Education Sciences Career-Technical Grant Competition, May 2024
- Education Innovation and Research (EIR) Program: Mid-phase/Expansion Grant, August 2024
- U.S. Department of Education, Education Innovation and Research Grant Competition, August 2023
- US Department of Education, GEAR UP, July 2023
- U.S. Department of Education, Education Innovation and Research Grant Competition, August 2022
- US Department of Education, Upward Bound Math and Science, 2022
- US Department of Education, Native American CTE Program Grant Competition, 2021
- US Department of Education, Native Hawaiian CTE Program Grant Competition, 2021
- Ohio Dean's Compact on Exceptional Children, Incentive Grant Program, 2021
- US Department of Education, Education Stabilization Fund, Reimagine Workforce Preparation Grants Program, 2020
- US Department of Education, Education Innovation and Research Grants Program, 2020
- US Department of Education, Perkins Innovation and Modernization Grant, 2019
- US Department of Education, GEAR UP, 2018
- US Department of Education, High School CTE Teacher Pathway Initiative, 2017
- US Department of Education, Strengthening Institutions Program, 2017
- US Department of Education, Upward Bound, 2017
- US Department of Education, Talent Search, 2016
- US Department of Education, Educational Opportunity Centers, 2016
- US Department of Labor, TECH HIRE, 2016
- US Department of Labor, Youth Career Connect, 2014
- US Department of Energy, Workforce Training for the Electric Power Sector, 2010

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