

Millersville University
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Curriculum and Instruction- Science Education | Doctor of Philosophy *Graduation: 2005*

Curriculum and Instruction- Science Education | Master of Education *Graduation: 2002*

Biology | Bachelor of Science *Graduation: 1995*
Chemistry | Certification

Millersville University of Pennsylvania / Department of Educational Foundations *2016-Present*

Millersville University of Pennsylvania | Watershed Education Training Center (WETi) *2014-Present*

EDSE 435 Teaching Science in the Secondary School
ELED 361 Teaching Science in Elementary Schools
EDFN 355 Living Online: Youth Conflict, Agency & Identity on Social Media
EDUC 341 Elementary and Middle School Science Methods
EDFN 330 Instructional Technology, Design, and Assessment
EDFN 320 Instructional Technology
EDFN 301 Cell Biology Pedagogy Seminar

ACTE 655 Integrative STEM Education
ELED 661 Teaching Science in Schools

ACTE 651 Science Curriculum and Reform
ACTE 634 The Legal and Ethical Implications of Online Instruction
ACTE 625 Technology & Assessment for Teaching & Learning
EDFN 530 Instructional Technology, Design, and Assessment
EDFN 520 Instructional Technology

Chesapeake Bay Total Project: \$298,877

*Co-Primary Investigator (co-PI)
STEM + Computing Partnerships (STEM + C)
Total Project: \$2,500,000
Award#: DRL-1640088*

*Co-Primary Investigator (co-PI)
NSF- Advanced Technological Education (ATE)
Total Project: \$200,00*

*Co-Primary Investigator (co-PI)
NSF- Improving Undergraduate STEM Education (IUSE)
Total Project: \$300,00*

*Primary Investigator (PI)
NSF- Discovery Research in K-12(DRK-12)
Total Project: \$2,900,000
Award#- DRL-1417527*

Senior Personnel

NSF- Innovative Technology Experiences for Students and Teachers STEE (gaE)1(e)9 ()3 ()TJEMC /P /MC30Tc 0 Tw I

Co

Marcum-Dietrich, N., Stunkard, C., & Krauss, Z., Kerlin, S. (2021). Uncharted WATERS: Sustaining a

- Marcum-Dietrich, N., (2008). Using constructivist theories to educate the outsiders. *Journal of Latinos and Education* 7(1), 79-87.
- Marcum- Dietrich, N. & Dreon, O. (2008). *Authentic Instruction with Technology: A Student Centered Approach*. Kendall-Hunt Publishing. Dubuque, IA.
- Marcum-Dietrich, N., (2007). Genetic symposium: A model of scientific talk. *American Biology Teacher*. 69(8), 520.
- Marcum-Dietrich, N., (2007) Teaching teachers to track tech tips. *Educatorxducatps t 1 T7ah t*

Award # 0929639

Developed a complete watershed curriculum that was tested and implemented in schools in PA and distributed nationally.

Higher Education Program- Development

Drafted the proposal for a new endorsement program that was approved by the Pennsylvania Department of Education

1st STEM endorsement program in the state of Pennsylvania

Co-authored the proposal for the establishment of watershed stewardship and student/faculty Research center at Millersville University

PDS Program Coordinator/Co-Chair

Co-created a new model for secondary education teacher preparation

**In 2014, the MU Secondary PDS Program was the recipient of the Exemplary Professional Development School Achievement Award by the National Association of Professional Development Schools*

Co-drafted a proposal for a new departmental Pedagogical Center Knowledge M.Ed.

Completed SPA report revisions- resulting in a successful SPA report

Higher Education- Curriculum Development

Authored and taught a new ACTE core course that teaches instructional technology through the lens of formative assessment practices.

Co-Authored and taught a General Education Course that explores the work of social theorists, technology gurus, public policymakers, and youth participants who continue to grapple with the ever-changing landscape of social media.

Authored and taught a course that addresses current legislation pertaining to the use of copyrighted digital media in classroom, best practice in the use of online tools and applications with children over and under 13 years of age, and current controversies and legal challenges related to children's online behaviors.

Authored and taught a pedagogy seminar for cell biology course taught by Joel Piperberg. The goal of the course is to investigate "best practice" in science education and encourage students to consider a career in secondary science education.

Authored a master's level course in science education for the Assessment, Curriculum and Teaching (ACTE) Masters in Education (M.Ed) program the course examines literature that provides the foundation for modern reform in science education.

Authored a master's level course in science education, Curriculum and Teaching (ACTE) Master's in Education (M.Ed.) program- new degree program.

Kerlin, S., Staudt, C., & Marcum-Dietrich, N., (2022, March 14-18) *Simulations, GIS Modeling, Online, Classroom, Outside Activities and Research from the WATERS Curriculum*. Paper presented at the biannual meeting of the World Environmental Education Congress (WEEC), Prague, Czech Republic.

Kerlin, S., Marcum-Dietrich, N., Peffer, T., (2022, March 14-18). *Building Capacity for Watershed and Environmental Literacy: A discussion of collaborative efforts from the state of Pennsylvania, USA*. Paper presented at the biannual meeting of the World Environmental Education Congress (WEEC), Prague, Czech Republic.

Marcum

- Kline, D., Marcum-Dietrich, N., Muenz, T., & Kerlin, S. (2020, March 17–20). *Best Management Practices on School Grounds for Watershed Health*. Paper presented at the meeting of the Pennsylvania Association of Environmental Educators and Pennsylvania Recreation and Parks Society, Seven Springs, PA.
- Krauss, Z., Marcum-Dietrich, N., Kerlin, S., & Stunkard, C. (2020, November 6–7). *Watershed Awareness using Technology and Environmental Research for Sustainability (WATERS)*. Poster presented at the Bucknell River Symposium, Virtual.
- Marcum-Dietrich, N., Kerlin, S., & Staudt, C. (2020, April 3 CANCELLED). *HIGH SCHOOL Share-A-Thon: WATERS*. Paper presented at the meeting of the National Science Teaching Association, Boston, MA. <https://nsta.org>
- Marcum-Dietrich, N., Kerlin, S., & Staudt, C. (2020, April 3 CANCELLED). *Meet Me in the Middle Share-a-Thon: Watershed Awareness using Technology & Environmental Research for Sustainability*. Paper presented at the meeting of the National Science Teaching Association, Boston, MA. <https://nmlsta.wildapricot.org/>
- Marcum-Dietrich, N., Kerlin, S., & Staudt, C. (2020, October 14–18 CANCELLED). *The Watershed Awareness Using Technology And Environmental Research For Sustainability (Waters)*. Poster presented at the meeting of the North American Association for Environmental Educators, Virtual.
- Marcum-Dietrich, N., & Stunkard, C. (2020, October 23–25). *Explore Free and Accessible Watershed Activities for Middle School Classrooms*. Paper presented at the meeting of the Association for Middle Level Education, Virtual.
- Marcum-Dietrich, N. (2020). WATERS. Marcum-Dietrich, N., Kimball, N., Staudt, C. (2019). *Precipitating Change: Embedding computational thinking into the middle school science classroom*. Poster presented at the annual meeting of the American Educational Research Association (AERA). Toronto, ON.
- Staudt, C., Kerlin, S., & Marcum-Dietrich, N. (2020, July 22). *Explore Free Watershed Awareness using Technology and Environmental Research for Sustainability (WATERS) Activities for Middle School Environmental Classrooms*. Paper presented at the 2020 STEM Forum & Expo, Louisville, KY. <https://nsta.org>
- Staudt, C., Kerlin, S., & Marcum-Dietrich, N. (2020b, July 27). *Explore Free Watershed Awareness using Technology and Environmental Research for Sustainability (WATERS) Activities for Middle School Environmental Classrooms*. Paper presented at the 2020 STEM Forum & Expo, Louisville, KY.
- Staudt, C., Kerlin, S., Marcum-Dietrich, N., Valadez, J., Daneker, D., & Leach, P. (2020, April 3 CANCELLED). *Explore Free Watershed Awareness using Technology and Environmental Research for Sustainability (WATERS) Activities for Middle School Classrooms*. Paper presented at the meeting of the National Science Teaching Association, Boston, MA. <https://nsta.org>
- Marcum-Dietrich, N., Bruozas, M., & Staudt, C. (2019). *Embedding computational thinking into a middle school science meteorology curriculum*. Interactive Poster presented at the annual meeting of the National Association of Research in Science Teaching (NARST). Baltimore, MD.
- Marcum-Dietrich, N., Staudt, C., & Kerlin, S. (2019). *Teaching Environmental Sustainability – Model My Watershed*. Paper presented at the annual meeting of the National Association of Research in Science Teaching (NARST). Baltimore, MD.
- Marcum-Dietrich, N., Bruozas, M., & Staudt, C. (2018). *Teaching Computational Thinking in the Science Classroom using simulations*. Research Paper presented at the annual meeting of the International Society of Technology Education (ISTE). Chicago, IL.
- Marcum-Dietrich, N., Bruozas, M.; Dietrich, B. & Staudt, C. (2018). *Teaching Computational Thinking in the Science Classroom using simulations*. Research Paper presented at the annual meeting of the International Society of Technology Education (ISTE). Chicago, IL.

Marcum-

- Marcum-Dietrich, N. & Staudt, C. (2017), *Teaching Environmental Sustainability - Model My Watershed*. Interactive poster presentation at annual meeting of the American Educational Research Association (AERA). San Antonio, TX.
- Marcum-Dietrich, N. & Staudt, C. (2017), *Assessing Systems Thinking through Science and Engineering Practices*. Symposium presentation at annual meeting of the National Association of Research in Science Teaching (NARST). San Antonio, TX.
- Marcum-Dietrich, N., Kerlin, S. & Staudt, C. (2017), *Using Field and Online Technologies to Learn About Watershed Modeling*. Interactive poster presented at annual meeting of the National Association of Research in Science Teaching (NARST). San Antonio, TX.
- Marcum- Dietrich, N., Hess, & M., Staudt, C. (2016), *Teaching Environmental Sustainability Using a Place-Based Watershed Modeling Application*. Session presented at the annual meeting of the STEM Expo. Denver, CO.
- Marcum- Dietrich, N., Hess, M., Staudt, C. & Muenz, T. (2016), *Model My Watershed: Using Local Data to Make Local Decision*. Session presented at the annual meeting of the National Science Teacher Association (NSTA). Nashville, TN.
- Marcum- Dietrich, N., Hess, M., Staudt, C. & Muenz, T. (2016), *Teaching Environmental Sustainability with the Model My Watershed Application*. Session presented at the annual meeting of the National Science Teacher Association (NSTA). Nashville, TN.
- Marcum- Dietrich, N., Hess, M., Staudt, C. & Muenz, T. (2016), *Model My Watershed: Using Local Data to Make Local Decision*. Session presented at the annual meeting of the National Science Teacher Association (NSTA). Nashville, TN.
- Marcum- Dietrich, N. & Staudt, C. (2015). *Teaching environmental sustainability - Model My Watershed*. NSF Award #: 1417527. Video presented at the NSF 2015 Teaching and Learning Showcase. <http://resourcecenters2015.videohall.com/posters/525>
- Marcum- Dietrich, N., Gill, S., & Staudt, C. (2015). *Teaching environmental sustainability*. Paper presented at the annual meeting of the North American Association of Environmental Education (NAAEE). San Diego, CA.
- Hernandez, J. & Marcum- Dietrich, N. (2015). *Teaching environmental sustainability - Model My Watershed*. Session presented at the annual meeting of the Geological Society of America (GSA). Baltimore, MD.
- Marcum- Dietrich, N. (2015). *Teaching environmental sustainability using a place-based watershed modeling application*. Poster presented at annual meeting of the National Association of Research in Science Teaching (NARST). Chicago, IL.
- Marcum- Dietrich, N., Gill, S., & Staudt, C. (2015). *Teaching environmental sustainability with a watershed modeling curriculum*. Paper presented at the annual meeting of the American Educational Research Association (AERA). Chicago, IL.
- Dreon, O. & Marcum-Dietrich, N. (2015). *The Impact of Field Placement Design on Preservice Teachers' Self-Efficacy: A Comparative Study*. Paper presented at the annual meeting of the American Educational Research Association (AERA). Chicago, IL.
- Marcum- Dietrich, N., Gill, S., & Staudt, C. (2015). *Model My Watershed: Using place-based education to promote STEM learning and watershed citizenship*. Poster presented at the annual meeting of the American Association for the Advancement of Science (AAAS). San Jose, CA.
- Marcum-Dietrich, N. (2015). *Method's instructor's challenge: unit planning in a co-teaching environment*. Session presented at the annual meeting of the National Association of Professional Development Schools (NAPDS). Atlanta, GA.

- Lessen, E., *A Conversation with the 2014 recipients of the NAPDS award for exemplary professional development school achievement*. Panel presented at the annual meeting of the National Association of Professional Development Schools (NAPDS). Atlanta, GA.
- Marcum-Dietrich, N. (2014). *Improving STEM teacher preparation at a public university: undergraduate teacher residency programs*. Poster presented at the annual meeting of the American Association for the Advancement of Science (AAAS). Chicago, IL.
- Marcum-Dietrich, N., Gill, S. (2014), *Model My Watershed: An online tool that investigates YOUR watershed*. Session presented at the annual meeting of the National Science Teacher Association (NSTA). Boston, MA.
- Dreon, O. & Marcum-Dietrich, N. (2014). *Self-Efficacy: Evolution and field placement design*. Session presented at the annual meeting of the National Association of Professional development Schools (NAPDS). Las Vegas, NV.
- Marcum-Dietrich, N., Dreon, O., Long, E., Miller, A. & Mahoney, T. (2014) *Encouraging and supporting a culture of scholarly research in your PDS program*. Session presented at the annual meeting of the National Association of Professional Development Schools (NAPDS). Las Vegas, NV.
- Gill, S. & Marcum-Dietrich, N. (2013). *Using Model My Watershed: An authentic online hydrologic model*. Session presented at the annual meeting of the North American Association of Environmental Education (NAAEE). Baltimore, MD.
- Marcum-Dietrich, N. & Cooper, M. (2013). *STEM school-university partnership: Improving science teacher preparation at Millersville University*. Poster presented at the annual meeting of the American Association for the Advancement of Science (AAAS). Boston, MA.
- Marcum-Dietrich, N. & Dreon, O. (2013). *The Essential Partner: Investigating Mentors' Perceptions of the PDS Program*. Paper presented at the annual meeting of the American Educational Research Association (AERA). San Francisco, CA.
- Dreon, O., & Marcum-Dietrich, N. (2013). *Navigating self-doubt: A PDS journey*. Session presented at the annual meeting of the National Association of Professional development Schools (NAPDS). New Orleans, LA.
- Marcum-Dietrich, N. & Dreon, O. (2013). *The essential partner: Investigating mentors' perceptions of the PDS program*. Session presented at the annual meeting of the National Association of Professional development Schools (NAPDS). New Orleans, LA.
- Marcum-Dietrich, N., Dreon, O., Shea, T., & Stolzfus, L. (2013). *Developing a PDS research community at your institution*. Session presented at the annual meeting of the National Association of Professional development Schools (NAPDS). New Orleans, LA.
- Marcum-Dietrich, N (2012). *Improving STEM teacher education with a residency model*. Session presented at the annual STEM Forum and Expo. Atlantic City, NJ.
- Marcum-Dietrich, N & Gill, S. (2012). *Model My Watershed: An online hydrologic model for your neighborhood*. Session presented at the annual STEM Forum and Expo. Atlantic City, NJ.
- Marcum-Dietrich, N. & Dreon, O. (2012). *Participating in change: Mentor-teacher's perceptions of the effectiveness of a science teacher residency program*. Paper presented at the annual meeting of the American Educational Research Association (AERA). Vancouver, B.C.
- Marcum-Dietrich, N. & Dreon, O. (2012). *Implementing a residency-model for science teacher preparation*. Poster presented at the annual meeting of the National Association of Research in Science Teaching (NARST). Indianapolis, IN.
- Marcum-Dietrich, N. & Dreon, O. (2012). *Supporting teacher development through social networking*. Session presented at the annual meeting of the National Science Teacher Association (NSTA). Indianapolis, IN.

Committee Member
Position Attained: Invited

Committee Member
Position Attained: Elected

Chair
Position Attained: Elected

Department Service

Program Author & Endorsement Program Coordinator

Committee Member

Mentor

Administered the Secondary PDS program and coordinated student placements and public school relations

Administered the Secondary PDS program and coordinated student placements and public school relations

Committee Member