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Contents

1 Education	1
2 Experience	1
2.1 Current Positions	1
2.2 Previous Positions	2
3 Publications	2
3.1 Peer-Reviewed Journal Publications	2
3.2 Conference Proceedings	5
3.3 Books	6
3.4 Book Chapters	7
3.5 Other Publications	7
3.6 Patents	8
4 Presentations	9
4.1 Invited Conference Talks	9
4.2 Contributed Talks, Workshops, and Colloquia	10
5 Funded Grant Projects	17
6 Awards	17
7 Conferences Organized	18
8 Service	19
9 Teaching	20

1 Education

- Ph.D., 1997, Michigan State University, USA (theoretical nuclear physics, adviser Prof. Wolfgang Bauer)
- Diplom-Physiker (M.Sc.), 1993, Universität Hannover, Germany (theoretical nuclear physics)

2 Experience

2.1 Current Positions

- since 2019: Director of Educational Development and Technology, ETH Zurich

Directing the administrative department Educational Development and Technology (50 staff members plus 10 teaching specialists within subject departments): faculty development, curriculum development, innovation in teaching, teaching evaluations, technology support, online systems, MOOCs, and online exams. Reporting to Rector of ETH.

- since 2010: Associate Professor of Physics (*currently on leave*), Michigan State University

Teaching introductory physics courses and senior seminars, research in physics education and use of technology in STEM education, assessment, educational data mining, and learning analytics. Directing LON-CAPA course and learning content management project.

- since 2004: Co-Founder and Technology Officer, eduCog, LLC

Commercial spin-off of National Science Foundation grant on learning content management; hosting LON-CAPA for high schools, colleges, and universities.

2.2 Previous Positions

- 2015-2017: Vice President, CourseWeaver Corp.
- 2013-2015: Co-Founder and Chief Science Officer, CourseWeaver Corp.
- Summer 2013: Guest Professor, Ostfalia University of Applied Sciences, Germany
- Acad. Year 2011/12: Sabbatical: Visiting Associate Professor of Physics, Massachusetts Institute of Technology
- Summer 2006: Guest Professor, FernUniversität in Hagen, Germany
- 2004-2010: Assistant Professor, Michigan State University
- 1997-2011: Director of Laboratory for Instructional Technology in Education, Division of Science and Mathematics Education, Michigan State University
- 1996: Intern, Cable News Network (CNN), Atlanta
- 1993-1997: Research Assistant, National Superconducting Cyclotron Laboratory, Michigan State University

3 Publications

3.1 Peer-Reviewed Journal Publications

1. M. Teresa Peña, Peter U. Sauer, Alfred Stadler, and Gerd Kortemeyer, *Three-nucleon force and the Delta-mechanism for pion production and pion absorption*, Phys. Rev. C **48**(5), 2208 – 2221 (1993)
2. Gerd Kortemeyer, Wolfgang Bauer, Kevin Haglin, Joelle Murray, and Scott Pratt, *Causality Violations in Cascade Models of Nuclear Collisions*, Phys. Rev. C **52**(5), 2714 – 2724 (1995)
3. Gerd Kortemeyer, Frank Daffin, and Wolfgang Bauer, *Nuclear Flow in Consistent Boltzmann Algorithm Models*, Phys. Lett. B **374**(1-3), 25 – 30 (1996)
4. Gerd Kortemeyer, Wolfgang Bauer, and Gerd J. Kunde, *Iso-spin dependent multi-fragmentation in $^{112}\text{Sn}+^{112}\text{Sn}$ and $^{124}\text{Sn}+^{124}\text{Sn}$ collisions*, Phys. Rev. C **55**(5), 2730 – 2733 (1997)
5. Klaus Morawetz, Václav Spivcka, Pavel Lipavsky, Gerd Kortemeyer, Christiane Kuhrts, and Regina Nebauer, *Virial corrections to simulations of heavy ion reaction*, Phys. Rev. Lett. **82**(19), 3767 – 3770 (1999)
6. Gerd Kortemeyer and Wolfgang Bauer, *Multimedia Collaborative Content Creation (mc^3) - the MSU LectureOnline System*, Journal of Engineering Education **88**(4), 421 – 427 (1999)
7. Gerd Kortemeyer, Matthew Hall, Joyce Parker, Behrouz Minaei-Bidgoli, Guy Albertelli II, Wolfgang Bauer, and Edwin Kashy, *Effective Feedback to the Instructor from Online Homework*, Journal of Asynchronous Learning Networks **9**(2), 19 – 28 (2005)
8. Gerd Kortemeyer, Wolfgang Bauer, Walter Benenson, and Edwin Kashy, *Retaking a Test Online*, The Physics Teacher **44**(4), 235 – 239 (2006)

9. Gerd Kortemeyer, *An analysis of asynchronous online homework discussions in introductory physics courses*, American Journal of Physics **74**(6), 526 – 536 (2006)
10. Gerd Kortemeyer, *Correlations between student discussion behavior, attitudes, and learning*, Phys. Rev. ST Phys. Educ. Res. **3**, 010101-1 – 010101-8 (2007)
11. Gerd Kortemeyer, *The Challenge of Teaching Introductory Physics to Premedical Students*, The Physics Teacher **45**(9), 552 – 557 (2007)
12. Gerd Kortemeyer, *A Polarizer Demo Using LCDs*, The Physics Teacher **46**(1), 58 (2008)
13. Gerd Kortemeyer, Edwin Kashy, Walter Benenson, and Wolfgang Bauer, *Experiences using the open-source learning content management and assessment system LON-CAPA in introductory physics courses*, American Journal of Physics **76**(4 & 5), 438 – 444 (2008)
14. Peng Han, Gerd Kortemeyer, Bernd J. Krämer, and Christine von Prümmer, *Exposure and Support of Latent Social Networks Among Learning Object Repository Users*, Journal of Universal Computer Science **14**(10), 1717 – 1738 (2008)
15. Gerd Kortemeyer, *Gender differences in the use of an online homework system in an introductory physics course*, Phys. Rev. ST Phys. Educ. Res. **5**, 010107-1 – 010107-8 (2009)
16. Gerd Kortemeyer and Catherine Westfall, *History of Physics: Outing the Hidden Curriculum?*, American Journal of Physics **77**(10), 875 – 881 (2009)
17. Gerd Kortemeyer, *Apparatus for Teaching Physics: Experimenting with Constant Current and Voltage Sources*, The Physics Teacher **48**(1), 68 – 69 (2010)
18. Gerd Kortemeyer and Catherine Westfall, *The Physical Tourist: A European Study Course*, Physics in Perspective **12**(1), 89 – 99 (2010)
19. Gerd Kortemeyer and Peter Riegler, *Large-Scale E-Assessments, Prüfungsvor- und -nachbereitung: Erfahrungen aus den USA und aus Deutschland*, Zeitschrift für E-Learning **10**(1), 8 – 22 (2010)
20. Émerson Cruz, Brian O’Shea, Werner Schaffenberger, Steven F. Wolf, and Gerd Kortemeyer, *Tutorials in Introductory Physics: The Pain and the Gain*, The Physics Teacher **48**(7), 453 – 457 (2010)
21. Peter Riegler and Gerd Kortemeyer, *Praxisbericht: Mehrwert freier elektronischer Übungsaufgaben in MINT-Fächern*, Zeitschrift für E-Learning **10**(3), 53 – 59 (2010)
22. Julie Libarkin, Emily Ward, Steven Anderson, Gerd Kortemeyer, and Stuart Raeburn, *Revisiting the Geoscience Concept Inventory: A Call to the Community*, Geological Society of America Today **21**(8), 26 – 28 (2011)
23. Émerson Cruz, Hélio Dias, and Gerd Kortemeyer, *The effect of formative assessment in Brazilian university physics courses*, Revista Brasileira de Ensino de Física **33**(4), 4315 – 4315 (2011)
24. Steven F. Wolf, Daniel P. Dougherty, and Gerd Kortemeyer, *Empirical Approach to Interpreting Card-Sorting Data*, Phys. Rev. ST Phys. Educ. Res. **8**, 010124-1 – 010124-15 (2012)
25. James T. Laverty and Gerd Kortemeyer, *Function Plot Response: A Scalable System for Teaching Kinematics Graphs*, American Journal of Physics **80**(8), 724 – 733 (2012)
26. Steven F. Wolf, Daniel P. Dougherty, and Gerd Kortemeyer, *Rigging the deck: Selecting good problems for expert-novice card-sorting experiments*, Phys. Rev. ST Phys. Educ. Res. **8**, 020116-1 – 020116-7 (2012)
27. James T. Laverty, Wolfgang Bauer, Gerd Kortemeyer, and Gary Westfall, *Want to Reduce Guessing and Cheating While Making Students Happier? Give More Exams!*, The Physics Teacher **50**(9), 540 – 543 (2012)
28. Gerd Kortemeyer, Jordan Fish, Jesse Hacker, Justin Kienle, Alexander Kobylarek, Michael Sigler, Bert Wierenga, Ryan Cheu, Ebae Kim, Zachary W. Sherin, Sonny Sidhu, and Philip Tan, *Seeing and Experiencing Relativity - A New Tool for Teaching?*, The Physics Teacher **51**(8), 460 – 461 (2013)

29. Stefan Dröschler, Gerd Kortemeyer, and Peter Riegler, *Openness: weniger ist mehr?*, Zeitschrift für Hochschulentwicklung **8**(4), 12 – 25 (2013)
30. Gerd Kortemeyer, Stefan Dröschler, and David E. Pritchard, *Harvesting Latent and Usage-based Metadata in a Course Management System to Enrich the Underlying Educational Digital Library*, International Journal on Digital Libraries **14**(1), 1 – 15 (2014)
31. Gerd Kortemeyer, *Extending Item Response Theory to Online Homework*, Phys. Rev. ST Phys. Educ. Res. **10**, 010118-1 – 010118-9 (2014)
32. Daniel T. Seaton, Gerd Kortemeyer, Yoav Bergner, Saif Rayyan, and David E. Pritchard, *Analyzing the Impact of Course Structure on eText Use in Blended Introductory Physics Courses*, American Journal of Physics **82**(12), 1186 – 1197 (2014)
33. Gerd Kortemeyer, *An Empirical Study of the Effect of Granting Multiple Tries for Online Homework*, American Journal of Physics **83**(7), 646 – 653 (2015)
34. Gerd Kortemeyer, *The Google calculator*, The Physics Teacher **53**, 375 – 376 (2015)
35. Gerd Kortemeyer, *The Losing Battle against Plug-and-Chug*, The Physics Teacher **54**, 14 – 17 (2016)
36. Zachary W. Sherin, Ryan Cheu, Philip Tan, and Gerd Kortemeyer, *Visualizing Relativity: the OpenRelativity Project*, American Journal of Physics **84**, 369 – 374 (2016)
37. Gerd Kortemeyer, *The Psychometric Properties of Classroom Response Systems*, Journal of Science Education and Technology **25**(4), 561 – 574 (2016)
38. Gerd Kortemeyer, *Scalable Continual Quality Control of Formative Assessment Items in an Educational Digital Library*, International Journal on Digital Libraries **17**(2), 143 – 155 (2016)
39. Gerd Kortemeyer, *Work Habits of Students in Traditional and Online Sections of an Introductory Physics Course*, Journal of Science Education and Technology **25**(5), 697 – 703 (2016)
40. Peter Riegler, Andreas Simon, Marcus Prochaska, Christian Kautz, Rebekka Bierwirth, Susan Hagendorf, and Gerd Kortemeyer, *Using Tutorials in Introductory Physics on Circuits in a German University Course: Observations and Experiences*, Physics Education **51**(6), 065014-1 – 065014-15 (2016)
41. Emre Gönülateş and Gerd Kortemeyer, *Modeling Unproductive Behavior in Online Homework in Terms of Latent Student Traits: An Approach Based on Item Response Theory*, Journal of Science Education and Technology **26**(2), 139 – 150 (2017)
42. Zachary W. Sherin, Philip Tan, Heather Fairweather, and Gerd Kortemeyer, *"Einstein's Playground": An Interactive Planetarium Show on Special Relativity*, The Physics Teacher **55**, 550 – 554 (2017)
43. DeVaughn Croxton and Gerd Kortemeyer, *Informal physics learning from video games: a case study using gameplay videos*, Physics Education **53**(1), 015012-1 – 015012-12 (2018)
44. Gerd Kortemeyer and Anna F. Kortemeyer, *The Nature of Collaborations on Programming Assignments in Introductory Physics Courses: A Case Study*, European Journal of Physics **39**(5), 055705-1 – 055705-20 (2018)
45. Gerd Kortemeyer, Daniel Anderson, Ann Marie Desrochers, Amanda Hackbardt, Kelsie Hoekstra, Alexander Holt, Asif Iftekhar, Tyler Kabaker, Nicole Keller, Zosha Korzecke, Angelos Gogonis, Quincy Manson, George McNeill, Dev Mookerjee, Sean Nguyen, Benjamin Person, Madeline Stafford, Lucas Takamoribraganca, Zeren Yu, Fanjun Zeng, and Rabindra Ratan, *Using a Computer Game to Teach Circuit Concepts*, European Journal of Physics **40**(5), 055703-1 – 055703-10 (2019)
46. Gerd Kortemeyer, *Quick-and-Dirty Item Response Theory*, The Physics Teacher **57**, 608 – 610 (2019)
47. Menny Aka, Meike Akveld, Alexander Caspar, Gerd Kortemeyer, and Marinka Valkering-Sijssling, *In-Class Formative Assessment in an Introductory Calculus Class*, E-learning and Education (elearn) **13** (2020)
48. Gerd Kortemeyer and Stefan Dröschler, *A User-Transaction-Based Recommendation Strategy for an Educational Digital Library*, International Journal on Digital Libraries **22**(2), 147 – 157 (2021)

49. Gerd Kortemeyer, *Using Arduinos as Portable Measurement Devices*, The Physics Teacher (accepted)
50. Gerd Kortemeyer, *Virtual-Reality graph visualization based on Fruchterman-Reingold using Unity and SteamVR*, Information Visualization (accepted)

3.2 Conference Proceedings

1. Gerd Kortemeyer and Wolfgang Bauer, *Multimedia Collaborative Content Creation*, Proceedings of IEEE Frontiers in Education, Tempe, AZ (1998)
2. Gerd Kortemeyer, Wolfgang Bauer, Deborah A. Kashy, Edwin Kashy, and Cheryl Speier, *The LearningOnline Network with CAPA Initiative*, Proceedings of IEEE Frontiers in Education, Reno, NV (2001)
3. Guy Albertelli II, Behrouz Minaei-Bidgoli, William F. Punch, Gerd Kortemeyer, and Edwin Kashy, *Concept Feedback in Computer-Graded Assignments*, Proceedings of IEEE Frontiers in Education, Boston, MA (2002)
4. Behrouz Minaei-Bidgoli, Deborah A. Kashy, Gerd Kortemeyer, and William F. Punch, *Predicting Student Performance: An Application of Data Mining Methods with the Educational Web-Based System LON-CAPA*, Proceedings of IEEE Frontiers in Education, Boulder, CA (2003)
5. Gerd Kortemeyer, Guy Albertelli II, Wolfgang Bauer, Felicia Berryman, Jeremy Bowers, Matthew Hall, Edwin Kashy, Deborah A. Kashy, Helen Keefe, Behrouz Minaei-Bidgoli, William F. Punch, Alexander Sakharuk, and Cheryl Speier, *The LearningOnline Network with Computer-Assisted Personalized Approach*, Proceedings of Computer Based Learning in Science, Nicosia, Cyprus (2003)
6. Guy Albertelli II, Gerd Kortemeyer, Alexander Sakharuk, and Edwin Kashy, *Personalized Examinations in Large On-Campus Classes*, Proceedings of IEEE Frontiers in Education (2003)
7. Behrouz Minaei-Bidgoli, Gerd Kortemeyer, and William F. Punch, *Mining Feature Importance: Applying Evolutionary Algorithms within a Web-Based Educational System*, Proceedings of International Conference on Cybernetics and Information Technologies, Systems and Applications (2004)
8. Behrouz Minaei-Bidgoli, Gerd Kortemeyer, and William F. Punch, *Optimizing Classification Ensembles via a Genetic Algorithm for a Web-based Educational System*, Proceedings of Joint International Association for Pattern Recognition, Lisbon, Portugal (2004)
9. Behrouz Minaei-Bidgoli, Gerd Kortemeyer, and William F. Punch, *Association analysis for an online education system*, Proceedings of IEEE International Conference on Information Reuse and Integration, 504 – 509 (2004)
10. Behrouz Minaei-Bidgoli, Gerd Kortemeyer, and William F. Punch, *Enhancing Online Learning Performance: An Application of Data Mining Methods*, Proceedings of IASTED International Conference on Computers and Advanced Technology in Education, Kauai, HI **7** (2004)
11. Matthew Hall, Joyce Parker, Behrouz Minaei-Bidgoli, Guy Albertelli II, Gerd Kortemeyer, and Edwin Kashy, *Gathering and Timely Use of Feedback from Individualized On-Line Work*, Proceedings of IEEE Frontiers in Education, Savannah, GA (2004)
12. Guy Albertelli II, Matthew Hall, Gerd Kortemeyer, and Edwin Kashy, *Technology in the Teaching and Assessment of Engineering Prerequisite Courses*, Proceedings of IEEE Frontiers in Education, Savannah, GA (2004)
13. Mark Urban-Lurain, Guy Albertelli II, and Gerd Kortemeyer, *Using Information Technology to Author, Administer, and Evaluate Performance-Based Assessments*, Proceedings of IEEE Frontiers in Education, Indianapolis, IN (2005)
14. Wolfgang Bauer and Gerd Kortemeyer, *Research on Learning in LON-CAPA: Multiple Content Representations, Test Data Banks*, Proceedings of Computer Based Learning in Science, Zilina. Slovakia (2005)
15. Gerd Kortemeyer and Wolfgang Bauer, *LON-CAPA, an Open-Source Freeware Learning Content Management and Course Management System*, Proceedings of Computer Based Learning in Science, Zilina. Slovakia (2005)

16. Stuart Raeburn, Edwin Kashy, David Gift, Byron Brown, and Gerd Kortemeyer, *Are Two Course Management Systems better than One?*, Proceedings of IEEE Frontiers in Education, San Diego, CA (2006)
17. Gerd Kortemeyer, *LON-CAPA – An Open-Source Learning Content Management and Assessment System for the Sciences*, Proceedings of m-ICTE Conference, Lisbon, Portugal **1**, 407 – 411 (2009)
18. Gerd Kortemeyer, *LON-CAPA – An Open-Source Learning Content Management and Assessment System*, Proceedings of EdMedia, Honolulu, HI, 1515 – 1520 (2009)
19. Gerd Kortemeyer and Émerson Cruz, *An Open-Source Learning Content Management and Assessment System*, Proceedings of World Conference on Computers in Education, Bento Gonçalves, Brazil **42**, 340 – 348 (2009)
20. Peter Riegler and Gerd Kortemeyer, *Gender Differences in Computer Aided Assessments*, Workshop Mathematics for Engineers, Wismarer Frege Reihe **3**, 23 – 28 (2010)
21. Yoav Bergner, Stefan Dröschler, Gerd Kortemeyer, Saif Rayyan, Daniel T. Seaton, and David E. Pritchard, *Model-Based Collaborative Filtering Analysis of Student Response Data: Machine-Learning Item Response Theory*, Proceedings of International Conference on Educational Data Mining **5**, 95 – 102 (2012)
22. Steven F. Wolf, Daniel P. Dougherty, and Gerd Kortemeyer, *Rigging the Deck - Selecting Good Problems for Expert-Novice Card-Sorting Experiments*, Physics Education Research Conference, Philadelphia, PA, AIP Conf. Proc. **1513**, 426 – 429 (2012)
23. Gerd Kortemeyer, Philip Tan, and Steven Schirra, *A Slower Speed of Light: Developing Intuition about Special Relativity with Games*, Proceedings of Foundations of Digital Games, Chania, Crete, Greece (2013)
24. Daniel T. Seaton, Yoav Bergner, Gerd Kortemeyer, Saif Rayyan, Isaac Chuang, and David E. Pritchard, *The Impact of Course Structure on eText Use in Large-Lecture Introductory-Physics Courses*, Physics Education Research Conference, Portland, OR, AIP Conf. Proc. (2013)
25. Gerd Kortemeyer, *Lessons from (almost) 25 years of hybrid and online physics courses at Michigan State University.*, Proceedings of EdMedia, Washington, DC, 148 – 152 (2017)
26. Gerd Kortemeyer, *Game Development for Teaching Physics*, GIREP, Dublin, Ireland, J. Phys.: Conf. Ser. **1286**, 012048-1 – 012048-7 (2019)
27. Gerd Kortemeyer, *Gamification of Circuit Laws - Kirchoff's Revenge*, Proceedings of EdMedia, Amsterdam, Netherlands, 1170 – 1176 (2018)
28. Gerd Kortemeyer, *It's all in the data - but what is it? Learning analytics and data mining of multimedia physics courses*, World Conference on Physics Education, Sao Paulo, Brazil, International Journal of Physics and Chemistry Education **11**(1), 13 – 17 (2019)
29. Gerd Kortemeyer and Stefan Dröschler, *Support Effective Formative Assessment Through Collaborative Filtering: A Case Study*, Proceedings of EdMedia, Amsterdam, Netherlands, 1259 – 1271 (2019)
30. Gerd Kortemeyer, *Incorporating Computational Exercises into Introductory Physics Courses*, International Conference on Physics Education, Johannesburg, South Africa, J. Phys.: Conf. Ser. **1512**, 012025-1 – 012025-8 (2020)
31. Gerd Kortemeyer, *Game Development for Teaching Physics*, International Conference on Physics Education, Johannesburg, South Africa, J. Phys.: Conf. Ser. **1512**, 012024-1 – 012024-8 (2020)

3.3 Books

1. Gerd Kortemeyer et al., *Coprozessoren Programmierung mit Turbo Pascal und C++*, IWT Verlag (International Thompson Publishing) (Vaterstetten, Germany), ISBN: 3-88322-439-1 (1993)

3.4 Book Chapters

1. Behrouz Minaei-Bidgoli, Pang-Ning Tan, Gerd Kortemeyer, and William F. Punch, *Association analysis for a web-based educational system*, in C. Romero and S. Ventura (Eds.), *Data-Mining in E-Learning*, WITpress (Southampton, Boston), ISBN: 1-84564-152-3 (2006)
2. Susanne Bellmer, Gerd Kortemeyer, and Peter Riegler, *Computerbewertete Übungen in mathematischen, technischen und naturwissenschaftlichen Grundlagenfächern*, in Hans-Jürgen Appelrath and Leonore Schulze (Eds.), *Auf dem Weg zu exzellentem E-Learning - Kooperation und Vernetzung der Hochschullehre in Niedersachsen*, Waxmann Verlag (Münster, New York, München, Berlin), ISBN: 978-3-8309-2122-6 (2009)

3.5 Other Publications

1. Gerd Kortemeyer, *80387 aktiviert*, c't **4**, 260 (1992)
2. Gerd Kortemeyer, *APS-Zeitschriften wachsen exponentiell*, Physikalische Blätter **3**, 198 (1996)
3. Gerd Kortemeyer (script and video material compilation), *Energy Innovation* (video), Cable News Network (CNN), Atlanta, GA (1996)
4. Gerd Kortemeyer (script and video material compilation), *Nuclear Stockpile Reliability* (video), Cable News Network (CNN), Atlanta, GA (1996)
5. Gerd Kortemeyer (script and video material compilation), *Nuclear Stockpile Security* (video), Cable News Network (CNN), Atlanta, GA (1996)
6. Gerd Kortemeyer (background research and video material compilation), *Feynman lives!* (video), Cable News Network (CNN), Atlanta, GA (1996)
7. Gerd Kortemeyer (translator), *Introductory Physics - German Version (cliXX Physik)* (CD-ROM), Verlag Harri Deutsch, Germany, ISBN: 3-8171-1593-8 (1998)
8. Cheryl Speier and Gerd Kortemeyer, *Open Source Objects for Teaching and Learning*, Syllabus Magazine **11** (2001)
9. Gerd Kortemeyer, *The Evolving Growth of LON-CAPA*, Campus Technology, **3** (2006)
10. Gerd Kortemeyer, *Fertiggerichte aus der Tiefkühltruhe* (Interview), CampusInnovation (2007)
11. Gerd Kortemeyer (contributor), *End-of-Chapter homework problems*, in Raymond A. Serway, Chris Vuille, and Jerry S. Faughn (Eds.), *College Physics*, Cengage, ISBN: 0-49538-693-6 (2008)
12. Susanne Bellmer, Peter Riegler, Gerd Kortemeyer, and Gerd von Cölln, *Projektbericht: VITA - Virtual Teaching Assistant*, E-learning and Education (elearn), **5** (2009)
13. Gerd Kortemeyer and Peter Riegler, *Automatisch bewertete Übungsaufgaben und Übungsmaterialien*, Die Neue Hochschule **50**(2), 34 – 37 (2009)
14. Emily Ward, Julie Libarkin, Stuart Raeburn, and Gerd Kortemeyer, *The Geoscience Concept Inventory WebCenter provides new means for student assessment*, eLearning Papers, **20** (2010)
15. Peter Riegler and Gerd Kortemeyer, *LON-CAPA - eAssessment im internationalen Verbund*, Hamburger eLearning Magazin **7**, 53 – 55 (2011)
16. Gerd Kortemeyer (product owner), Philip Tan, Ryan Cheu, Ebae Kim, Zachary W. Sherin, Sonny Sidhu (producer), and Abe Stein, *A Slower Speed of Light* (video game), MIT Game Lab (2012)
17. Gerd Kortemeyer, *Ten Years Later: Why Open Educational Resources Have Not Noticeably Affected Higher Education, and Why We Should Care*, EDUCAUSE Review Online (2013)
18. Gerd Kortemeyer, *Open Educational Resources (OERs) - Eine gescheiterte Revolution*, eduKnow edu-sharing Wissenssammlung (2013)

19. Gerd Kortemeyer, *15 years of online physics courses at Michigan State University*, American Physical Society Forum on Education (FED) Newsletter (2014)
20. Gerd Kortemeyer, *Digital Rights Management: The Bane of Electronic Texts*, EDUCAUSE Review Online (2014)
21. Gerd Kortemeyer, *Over two decades of blended and online physics courses at Michigan State University*, E-learning and Education (elead), 10 (2014)
22. Gerd Kortemeyer, *The Two Worlds of Learning Analytics*, EDUCAUSE Review Online, 7 (2016)
23. Gerd Kortemeyer, *Researching Online Learning* (Interview), Research in Action Podcast [Kathryn Linder], Oregon State University (2017)
24. Gerd Kortemeyer, *The Spectrum of Learning Analytics*, E-learning and Education (elead), 12 (2017)
25. Zachary W. Sherin, Philip Tan, Heather Fairweather, and Gerd Kortemeyer, *Visual Physics: Doppler Rainbows*, The Physics Teacher **55**, 592 (2017)
26. Gerd Kortemeyer et al., *Kirchhoff's Revenge* (video game), Steam (2018)
27. Gerd Kortemeyer, *Physics Education Research: a replicable model for Discipline-Based Educational Research at European universities?*, ETH Teaching and Learning Journal **1**(2), 137 – 146 (2020)
28. Gerd Kortemeyer, *That's one giant step for a university, one small leap for digitization*, Bulletin VSH-AEU **2020**(3-4), 33 – 38 (2020)
29. Gerd Kortemeyer, Ada Pellert, Jennifer Sparrow, Karin Brown, and Sarah M. Springman, *Rethinking Higher Education: Blended Learning*, European Women Rectors Association (2021)
30. Gerd Kortemeyer, Stefan Dröschler, Peter Riegler, and Nick Koslowski, *A Model for Lifelong Learners' Educational Records and Identity in a Next Generation Learning Management System*, E-learning and Education (elead) (2021)
31. Gerd Kortemeyer and Stefan Dröschler, *Report from the Next Generation Learning Management System Workshop 2020*, E-learning and Education (elead) (2021)
32. Gerd Kortemeyer, *Student Social Linked Data* (Interview), The Edtech Podcast (2021)
33. Gerd Kortemeyer, *For lifelong learning to work, students must own their educational data*, Times Higher Education (2021)
34. Sam Blyth, Gerd Kortemeyer, Ian Pickup, Jude Sheeran, and Ashton Wenborn, *The future of personalized learning: Using technology to create new student pathways* (Interview), AWS Public Sector (2021)

3.6 Patents

1. Gerd Kortemeyer and Wolfgang Bauer, *System and method for preparing educational materials*, US Patent, 8,504,482 (issued August 2013)
2. Gerd Kortemeyer and Wolfgang Bauer, *System and method to facilitate creation of educational information*, US Patent, 8,831,997 (issued September 2014)
3. Gerd Kortemeyer and Wolfgang Bauer, *System and method for preparing and delivering informational content*, US Patent, 9,424,565 (issued August 2016)

4 Presentations

4.1 Invited Conference Talks

1. Talk *The LearningOnline Network with CAPA*, Multimedia in Physics Teaching and Learning, Gent, Belgium, October 2001
2. Talk *Delivering Online Content: The Student-Centered Approach* (with Wolfgang Bauer), Educause Seminars on Academic Computing (SAC), Directors Seminar, Snowmass, CO, August 2002
3. Talk *The LON-CAPA Initiative*, Partnerships in Global Learning Conference, Rio de Janeiro, Brazil, April 2003
4. Talk *The LearningOnline Network with CAPA*, California Virtual College Student Support and Instructional Services Conference, San Diego, CA, May 2003
5. Talk *The LearningOnline Network with CAPA - A Cross-Institutional Learning Content Management System*, International Conference on Computer Based Learning in Science, Nicosia, Cyprus, July 2003
6. Talk *The LearningOnline Network with CAPA*, AAPT Conference, Salt Lake City, UT, August 2005
7. Talk *OpenSource E-Learning Systeme und Integration in den USA*, CampusSource Workshop, Universität Dortmund, Dortmund, Germany, December 2007
8. Talk *The Assessment Continuum - Before, in, and after lecture*, AAPT Conference, Omaha, NE, August 2011
9. Talk *Making Homework Easier to Do Than to Copy*, AAPT Conference, Omaha, NE, August 2011
10. Talk *The e-Learning Revolution - und jetzt noch mal richtig?*, CampusSource Tagung, Hagen, Germany, April 2013
11. Talk *Assessment in Online Courses*, APS/AAPT Distance Education & Online Learning in Physics Workshop, College Park, MD, June 2013
12. Talk *Challenges: Cheating and Academic Quality*, APS/AAPT Distance Education & Online Learning in Physics Workshop, College Park, MD, June 2013
13. Talk *Walking in the Footsteps of Einstein: Why History of Physics Aids Physics Education*, APS Meeting, Savannah, GA, April 2014
14. Talk *How to Reduce Unproductive and Undesirable Behavior in Online Courses*, AAPT Conference, Minneapolis, MN, July 2014
15. Talk *News you can use: Open Source für Lehre und Lernen in den USA*, CampusSource Tagung, Münster, Germany, March 2015
16. Talk *Multiple Tries on Trial*, AAPT Conference, College Park, MD, July 2015
17. Talk *Lessons from two decades of hybrid and online courses at Michigan State University*, APS Meeting, Baltimore, MD, March 2016
18. Talk *It's all in the data - but what is it?*, AAPT Conference, Sacramento, CA, July 2016
19. Talk *Die zwei Welten der Learning Analytics*, CampusSource Tagung, Hagen, Germany, March 2017
20. Talk *Computing Across the Curriculum*, Juleseminar, Centre for Computing in Science Education, University of Oslo, Oslo, Norway, December 2017
21. Talk *Machine Learning and Learning Content Management*, uni.digital, Freie Universität Berlin, *online*, March 2020
22. Talk *Teaching in Emergency Mode*, CampusSource Workshop, FernUniversität in Hagen, *online*, June 2020

23. Talk *Next Generation Learning Management System - Ergebnisse vom Workshop*, CampusSource Tagung, FernUniversität in Hagen, *online*, September 2020
24. Talk *Von einem System der ersten Stunde - LON-CAPA - hin zum LMS der Zukunft NextGenLMS*, CampusSource Tagung, FernUniversität in Hagen, *online*, May 2021
25. Talk *Das Projekt NextGenLMS - Projektstand und spannender Ausblick*, CampusSource Tagung, FernUniversität in Hagen, *online*, September 2021

4.2 Contributed Talks, Workshops, and Colloquia

1. Colloquium *Das LearningOnline Network with CAPA (LON-CAPA)*, Technische Universität Dresden, Dresden, Germany, February 2002
2. Colloquium *The LearningOnline Network with CAPA (LON-CAPA)*, Stanford Research Institute, Menlo Park, CA, March 2002
3. Colloquium *The LearningOnline Network with CAPA (LON-CAPA)*, North Dakota State University, Fargo, ND, April 2002
4. Colloquium *The LearningOnline Network with CAPA (LON-CAPA)*, Massachusetts Institute of Technology, Cambridge, MA, August 2002
5. Presentation *The LearningOnline Network with CAPA (LON-CAPA)*, National Science Foundation, Washington, DC, October 2002
6. Colloquium *Das LearningOnline Network with CAPA (LON-CAPA)*, Learning Lab Lower Saxony, Hanover, Germany, November 2002
7. Talks/Workshops, LON-CAPA Conference, Reno, NV, January 2003
8. Talk *The LearningOnline Network with CAPA (LON-CAPA)*, National Learning Infrastructure Initiative Conference, New Orleans, LA, January 2003
9. Colloquium *The LearningOnline Network with CAPA - A Cross-Institutional Learning Content Management System*, UC Berkeley, Berkeley, CA, May 2003
10. Colloquium, HS Bremerhaven, Bremerhaven, Germany, July 2003
11. PERC Seminar *The LearningOnline Network with CAPA - A Cross-Institutional Open-Source Learning Content Management and Assessment System*, University of Maryland, College Park, MA, October 2003
12. Talk *The LearningOnline Network with CAPA (LON-CAPA)*, NLII, San Diego, CA, January 2004
13. Colloquium, Learning Management Systems Selection ComMassachusetts Institute of Technology (LMSSC), Simon Fraser University, Vancouver, BC, January 2004
14. Colloquium *The LearningOnline Network with CAPA (LON-CAPA)*, National Institute of Multimedia Education, Tokyo, Japan, April 2004
15. Colloquium *The LearningOnline Network with CAPA (LON-CAPA)*, Nagoya University, Nagoya, Japan, April 2004
16. Talk, PGL Conference, Management Issues in Distributed Learning Content Management Systems, Orlando, FL, June 2004
17. Presentation, National Science Foundation ITR Grantee Meeting, Washington, DC, June 2004
18. Talk, Computer Science Department, Michigan State University, East Lansing, MI, June 2004
19. Talk, NLII Summer Focus Session, Los Angeles, CA, June 2004
20. Booth, AAPT Conference, Sacramento, CA, July/August 2004

21. Talk, Seminars in Academic Computing, Snowmass, CO, August 2004
22. Talk, Multimedia in Physics Teaching and Learning, Universität Graz, Graz, Austria, September 2004
23. Talk, Gesellschaft für Didaktik der Mathematik und Physik, Heidelberg, Germany, September 2004
24. Talk, IEEE Frontiers in Education, Savannah, GA, November 2004
25. Talks/Workshops, LON-CAPA Conference, Columbia, SC, January 2005
26. Booth/Talk *Das LearningOnline Network with CAPA (LON-CAPA)* (with CampusSource), Learntec, Karlsruhe, Germany, January 2005
27. Workshop, LON-CAPA Workshop, Michigan State University, East Lansing, MI, June 2005
28. Talk, FernUniversität in Hagen, Hagen, Germany, June 2005
29. Talk *The LearningOnline Network with CAPA (LON-CAPA)*, Computer Based Learning in Science, Zilina, Slovakia, July 2005
30. Lecturer, Web-Enabling Scientific E-Learning Workshop, International Center for Theoretical Physics, Trieste, Italy, November 2005
31. Brown Bag Seminar *What's new in LON-CAPA?*, Michigan State University, East Lansing, MI, January 2006
32. Physics Colloquium *The LearningOnline Network with CAPA (LON-CAPA)*, University of Pittsburgh/Carnegie-Mellon University, Pittsburgh, PA, March 2006
33. Physics Colloquium *The LearningOnline Network with CAPA (LON-CAPA)*, Georgetown University, Washington, DC, April 2006
34. Colloquium, North Dakota State University, Fargo, ND, April 2006
35. Colloquium, Virginia Commonwealth University, Richmond, VA, May 2006
36. Introductory Talk, LON-CAPA Conference, Michigan State University, East Lansing, MI, May 2006
37. Talk *Analysis of Online Discussions*, LON-CAPA Conference, Michigan State University, East Lansing, MI, May 2006
38. Talk *Austausch und Wiederverwendung von Lernmaterialien in LON-CAPA*, CampusContent Forum, FernUniversität in Hagen, Hagen, Germany, June 2006
39. Talk *Das Lehr- und Lernsystem LON-CAPA*, Fachhochschule Braunschweig/Wolfenbüttel, Wolfenbüttel, Germany, June 2006
40. Talk, Universität Duisburg-Essen, Essen, Germany, June 2006
41. Talk *The LearningOnline Network with CAPA (LON-CAPA)*, Simon Fraser University, Vancouver, BC, July 2006
42. Talk *Analysis of Online Discussions*, VIPP Program, Michigan State University, East Lansing, July 2006
43. Talk *The Use of Computers in Physics Education - Online Materials and Systems for Teaching*, VIPP Program, Michigan State University, East Lansing, MI, July 2006
44. Talk *Open Source e-Learning-Projekte und Strategien USA / Deutschland im Vergleich*, CampusSource Workshop, Münster, Germany, October 2006
45. Talk *LON-CAPA*, China Annual Conference for International Education, Beijing, China, October 2006
46. Talk, Leibniz Universität Hannover, Hannover, Germany, November 2006
47. Talk *LON-CAPA and PER*, University of Maine, Orono, ME, April 2007

48. Colloquium *Experiences with using online materials and homework in a lecture-based introductory physics course*, University of Colorado, Boulder, CO, April 2007
49. Introductory Talk, LON-CAPA Conference, University of Illinois at Urbana-Champaign, Urbana-Champaign, IL, May 2007
50. Colloquium *LON-CAPA: An Overview*, McMaster University, Hamilton, Canada, June 2007
51. Talk, VIPP Program, Michigan State University, East Lansing, MI, July 2007
52. Talk *Correlations between student discussion behavior, attitudes, and learning*, AAPT Conference, Greensboro, NC, July 2007
53. Poster *The LearningOnline Network with CAPA (LON-CAPA)*, Physics Education Research Conference, Greensboro, NC, August 2007
54. Talk *OpenSource für's Lernen*, Festkolloquium, FernUniversität in Hagen, Schwerte, Germany, September 2007
55. Talk *LON-CAPA: Open Source Course Management and Assessment System*, Multimedia in Physics Teaching and Learning, Wrocław, Poland, September 2007
56. Talk *LON-CAPA: Open Source Course Management and Assessment System*, CRCSTL Seminar, Michigan State University, East Lansing, MI, October 2007
57. Talk, Universität Frankfurt, Frankfurt, Germany, December 2007
58. Talk *Neues in LON-CAPA*, CampusSource Workshop, Dortmund, Germany, December 2007
59. Talk *LON-CAPA*, International Forum on Online Education, Michigan State University, East Lansing, MI, January 2008
60. Workshop Welcome, LON-CAPA Conference, Simon Fraser University, Vancouver, Canada, May 2008
61. Talk *LON-CAPA Community*, LON-CAPA Conference, Simon Fraser University, Vancouver, Canada, May 2008
62. Poster, Physics Research & Education: Computation And Computer-Based Instruction, Bryant University, Smithfield, RI, June 2008
63. Talk *Erfahrung mit online Hausübungen in einführenden Physikvorlesungen*, DPG Tagung Didaktik der Physik, Bochum, Germany, March 2009
64. Poster *The LearningOnline Network with CAPA (LON-CAPA)*, m-ICTE Conference, Lisbon, Portugal, April 2009
65. Talks/Workshops, LON-CAPA Conference, East Lansing, MI, May 2009
66. Best Practices Session *LON-CAPA*, EdMedia, Waikiki, HI, June 2009
67. Talk, World Conference on Computers in Education, Bento Gonçalves, Brazil, July 2009
68. Workshop *LON-CAPA*, Multimedia in Science Teaching Workshop, Federal University of Bahia, Salvador, Brazil, August 2009
69. Series of two talks, Instructional Technology Brown Bag, Michigan State University, East Lansing, MI, October 2009
70. FutureTalk *Lehrveranstaltungen "just in time"* (with Peter Riegler), CeBIT, Hannover, Germany, March 2010
71. Talk, DPG Tagung Didaktik der Physik, Hannover, Germany, March 2010
72. Talk *Foundations of successful digital libraries, partnerships and sustainability*, EcoEd Digital Library Workshop, Washington, DC, March 2010

73. Talk *Library 2.0: Envisioning a Digital Library of the Future*, EcoEd Digital Library Workshop, Washington, DC, March 2010
74. Talk, Model United Nations, Michigan State University, East Lansing, MI, March 2010
75. Talks/Workshops, LON-CAPA Conference, Dalhousie University, Halifax, Canada, May 2010
76. Workshop *Assessment in LON-CAPA Workshop*, Purdue University, West Lafayette, IN, May 2010
77. Presentation/Workshop, Niedersächsisches Telekolloquium Hannover, Osnabrück, Wolfenbüttel, Clausthal, Braunschweig, *online*, May 2010
78. Talk, Massachusetts Institute of Technology, Cambridge, MA, May 2010
79. Talk (with Stuart Raeburn), University of Illinois at Urbana-Champaign, Urbana-Champaign, IL, June 2010
80. Talk, SourceTalk, Universität Göttingen, Göttingen, Germany, August/September 2010
81. Workshop *Conducting Research and publishing your MSU Study Abroad Experiences*, Michigan State University, East Lansing, MI, November 2010
82. Talk, Faculty Seminars in Research and Instructional Technology, Michigan State University, East Lansing, MI, January 2011
83. Talk, NSDL Digital Resource Discovery meeting, Ecological Society of America, Washington, DC, January 2011
84. Talk *LON-CAPA for Mathematics*, Brown Bag Seminar, Michigan State University, East Lansing, MI, February 2011
85. Talk, Math Department, Lyman Briggs College, Michigan State University, East Lansing, MI, February 2011
86. Talk *Physics Education Research*, CRCSTL Seminar, Michigan State University, East Lansing, MI, February 2011
87. Talk *LON-CAPA 3.0 Sneak Preview*, Brown Bag Seminar, Michigan State University, East Lansing, MI, April 2011
88. Talk, Faculty Seminars in Research and Instructional Technology, Michigan State University, East Lansing, MI, May 2011
89. Workshops, LON-CAPA Conference, Virginia Commonwealth University, Richmond, VA, May 2011
90. Welcome and Introduction, LON-CAPA Conference, Virginia Commonwealth University, Richmond, VA, May 2011
91. Talk *The LON-CAPA Shared Content Pool*, e-Cornucopia Conference, Oakland University, Rochester, MI, May 2011
92. Talk *The Effect of Formative Assessment in Brazilian University Physics Courses* (with Émerson Cruz), AAPT Conference, Omaha, NE, August 2011
93. Special Colloquium *The Assessment Continuum*, Virginia Tech, Blacksburg, VA, September 2011
94. Physics Colloquium *The History of Modern Physics Study Abroad*, Virginia Tech, Blacksburg, VA, September 2011
95. Talk *Massachusetts Institute of Technology Education Group*, Education Group, Massachusetts Institute of Technology, Cambridge, MA, January 2012
96. Webinar *The LON-CAPA Resource Sharing Network*, Open Education Week, *online*, March 2012
97. Presentation *Learning Content Management for OpenCourseWare*, OpenCourseWare Consortium Board Meeting, Cambridge, UK, April 2012

98. Special Physics Colloquium *Lernerfolgskontrolle*, Universität Leipzig, Leipzig, Germany, April 2012
99. Workshops *Things learned the hard way*, LON-CAPA Conference, University of Illinois at Urbana-Champaign, Urbana-Champaign, IL, May/June 2012
100. Series of three talks *Learning Content Management, Assessment, and System Administration*, edX, Cambridge, MA, July/August 2012
101. Talks/Workshops, LON-CAPA German Users Meeting, Universität Göttingen, Göttingen, Germany, August 2012
102. Talk, Brown Bag Seminar, Michigan State University, East Lansing, MI, September 2012
103. Talk, Google, Mountain View, CA, October 2012
104. Talk, Coursera, Mountain View, CA, October 2012
105. Workshop, Statistics Department, Michigan State University, East Lansing, MI, October 2012
106. Special Colloquium, Universität Leipzig, Leipzig, Germany, April 2013
107. Talk, Faculty Seminars in Academic Computing, Michigan State University, East Lansing, MI, May 2013
108. Talks/Workshops, LON-CAPA Conference, Michigan State University, East Lansing, MI, May 2013
109. Public Colloquium *Der MOOC Spuk - die E-Learning Revolution jetzt noch mal richtig?*, Ostfalia University of Applied Sciences, Wolfenbüttel, Germany, June 2013
110. Talk, LON-CAPA Forum, Hochschule Hannover, Hannover, Germany, June 2013
111. Talk (with Peter Riegler), Fireside Chat on Didactics, Technische Universität Clausthal, Clausthal, Germany, July 2013
112. Colloquium *Formative Assessments in großen Vorlesungen*, Technische Universität Hamburg-Harburg, Hamburg, Germany, July 2013
113. Workshop *LON-CAPA*, DiZ-Bayern, Ingolstadt, Germany, July 2013
114. Workshop *Fragenkonstruktion und Clickereinsatz*, Hochschule Karlsruhe, Karlsruhe, Germany, July 2013
115. Colloquium *Aktuelle hochschuldidaktische Entwicklungen in den USA*, Hochschule Karlsruhe, Karlsruhe, Germany, July 2013
116. Workshop *Lernerfolgskontrolle: vor, während und nach der Vorlesung*, Hochschule Karlsruhe, Karlsruhe, Germany, July 2013
117. Two-day workshop *Concept Tests*, DiZ-Bayern, Ingolstadt, Germany, July 2013
118. Workshop *RTOP Training*, Ostfalia University of Applied Sciences, Wolfenbüttel, Germany, August 2013
119. Workshop *Workshop on Concept Questions*, Ostfalia University of Applied Sciences, Wolfenbüttel, Germany, August 2013
120. Teaching Topics Talk *Raising and tending your flipped open hybrid virtual massive online course*, Center for Teaching Excellence, Southern Methodist University, Dallas, TX, October 2013
121. Physics Colloquium *The online thing*, Southern Methodist University, Dallas, TX, November 2013
122. Brown Bag Seminar *Digital Rights Management: The Bane of Electronic Texts*, Michigan State University, East Lansing, MI, February 2014
123. Workshops, LON-CAPA Conference, Michigan State University, East Lansing, MI, May 2014
124. Brown Bag Seminar, Michigan State University, East Lansing, MI, September 2014
125. Faculty Workshops, Purdue University, West Lafayette, IN, October 2014

126. Workshop *Creating Physics Simulations for Smartphones, Tablet Devices, and Computers in HTML5* (with Wolfgang Bauer), AAPT Conference, San Diego, CA, January 2015
127. Workshop *CourseWeaver: Easy Authoring of Computer- Graded Homework*, AAPT Conference, San Diego, CA, January 2015
128. Two-day workshop *LON-CAPA Course Coordination and Authoring*, Mountain View High School, Mountain View, CA, January 2015
129. Science Colloquium *How to Reduce Unproductive and Undesirable Behavior in Online Courses*, Delta College, University Center, MI, February 2015
130. Workshops, LON-CAPA Conference, Michigan State University, East Lansing, MI, May 2015
131. Talk *Learning Analytics and Educational Data Mining*, CIC Learning Analytics Meeting, Michigan State University, East Lansing, MI, June 2015
132. Presentation, Electric Paper, Lüneburg, Germany, July 2015
133. Presentation *Lilly Seminar on Interdisciplinary Teaching and Learning* (with Catherine Westfall), Michigan State University, East Lansing, MI, November 2015
134. Talk *Science Olympiad Michigan Coaches' Workshop*, Michigan State University, East Lansing, MI, December 2015
135. Planetarium Show *Einstein's Playground* (with Zachary W. Sherin, Heather Fairweather, and Philip Tan), Boston Museum of Science Hayden Planetarium, Boston, MA, February 2016
136. Talk *Physics Education Research Laboratory Seminar*, Michigan State University, East Lansing, MI, March 2016
137. Workshops *LON-CAPA Mathematical Functionality*, LON-CAPA Conference, Purdue University, West Lafayette, IN, May 2016
138. Talk *It's all in the data - but what is it?*, World Conference on Physics Education, University of São Paulo, São Paulo, Brazil, July 2016
139. Presentation *Kirchhoff's Revenge*, Meaningful Play Conference, Michigan State University, East Lansing, MI, October 2016
140. Presentation *Einstein's Playground* (with Zachary W. Sherin, Heather Fairweather, and Philip Tan), Meaningful Play Conference, Michigan State University, East Lansing, MI, October 2016
141. Physics Colloquium and Workshops, Oregon State University, Corvallis, OR, November 2016
142. Talk *Game Development for Teaching Physics*, AAPT Conference, Atlanta, GA, February 2017
143. Presentation, Mbeya University of Science and Technology, Mbeya, Tanzania, March 2017
144. Talk, Ostfalia University of Applied Sciences, Wolfenbüttel, Germany, March 2017
145. Talk, Universität Duisburg-Essen, Essen, Germany, March 2017
146. Talk *Teaching and Learning Spring Conference*, Michigan State University, East Lansing, MI, May 2017
147. Virtual Presentation *Physics for Life Sciences, online*, May 2017
148. Talk *Welcome and Analytics*, LON-CAPA Conference, Michigan State University, East Lansing, MI, June 2017
149. Best Practices Session *Lessons from (almost) 25 years of hybrid and online physics courses at Michigan State University*, EdMedia, Washington, DC, June 2017
150. Talk *Lessons from two decades of hybrid and online physics courses at Michigan State University*, GIREP, Dublin, Ireland, July 2017

151. Talk *Game Development for Teaching Physics*, GIREP, Dublin, Ireland, July 2017
152. Talk *Game Development for Teaching Physics*, Multimedia in Physics Teaching and Learning, British Open University, Milton Keynes, UK, September 2017
153. Judge, Science Olympiad Michigan Coaches' Workshop, Michigan State University, East Lansing, MI, December 2017
154. Colloquium *Game Development for Teaching Physics*, Science at Home, Aarhus University, Aarhus, Denmark, December 2017
155. Talk *Computer Games in Physics Teaching*, Centre for Computing in Science Education, University of Oslo, Oslo, Norway, December 2017
156. Special Colloquium, Universität Hildesheim, Hildesheim, Germany, December 2017
157. Presentation, ETH Zürich, Zürich, Switzerland, December 2017
158. Presentation, ETH Zürich, Zürich, Switzerland, May 2018
159. Workshops, LON-CAPA Conference, Purdue University, West Lafayette, IN, May/June 2018
160. Guest Teacher *Units on Kirchhoff Laws and Special Relativity*, Wesergymnasium Vlotho, Vlotho, Germany, June 2018
161. Full Paper: Practice Based Session *Gamification of Circuit Laws - Kirchhoff's Revenge*, EdMedia, Amsterdam, Netherlands, June 2018
162. Colloquium *Learning Analytics und Educational Data Mining als Schlüssel zu Personalized Learning Environments*, FernUniversität in Hagen, Hagen, Germany, July 2018
163. Colloquium *E-Assessment am Beispiel LON-CAPA*, University of Paderborn, Paderborn, Germany, July 2018
164. Talk *Game Development for Teaching Physics*, International Conference on Physics Education, Johannesburg, South Africa, October 2018
165. Talk *Incorporating Computational Exercises into Introductory Physics Courses*, International Conference on Physics Education, Johannesburg, South Africa, October 2018
166. Wrap-Up Session, Swiss Faculty Development Network Conference, ETH Zürich, Zürich, Switzerland, February 2019
167. Webinar *Seventeen Years Later: Why Open Educational Resources Have Not Noticeably Affected Higher Education, and Why We Should Care*, eduhub.ch Swiss e-Learning Community, *online*, May 2019
168. Workshops, LON-CAPA Conference, University of Illinois at Urbana-Champaign, Urbana-Champaign, IL, May 2019
169. Talk, Leadership in Academia, ETH Zürich, Zürich, Switzerland, May 2019
170. Presentation, International Consortium for Educational Development Council Meeting, University of Iceland, Reykjavik, Iceland, June 2019
171. Full Paper *Support Effective Formative Assessment Through Collaborative Filtering: A Case Study* (with Stefan Dröschler), EdMedia, Amsterdam, Netherlands, June 2019
172. Talk *Gamification of Learning: Circuit Games*, AAPT Conference, Provo, UT, July 2019
173. Two presentations, CampusSource Workshop, FernUniversität in Hagen, Hagen, Germany, September 2019
174. Presentation *Lightning Talk und World Café*, SWITCH ICT Focus, Luzern, Switzerland, November 2019
175. Presentation, eduHub SIG OER, ZHdK Zürich, Zürich, Switzerland, January 2020
176. Facilitator *Computational Competencies*, ETH Teaching Retreat, Abtwil, Switzerland, January 2020

- 177. Colloquium (Webinar), University of São Paulo, *online*, June 2020
- 178. Colloquium, Refresh Teaching, ETH Zürich, Zürich, Switzerland, September 2021
- 179. Talk *A User-Model for a Next Generation Learning Management System*, DELFI, *online*, September 2021
- 180. Colloquium *Organization of Teaching and Learning, Innovation, Interdisziplinarität*, VNSU Strategic Leadership Program, Universität Zürich, Zürich, Switzerland, September 2021
- 181. Talk *Die NBP ein NextGenEducation Ecosystem?*, BMBF Projekt Open Source Metabildungsplattform, *online*, November 2021
- 182. Presentation *World Café*, SWITCH ICT Focus, Geneva, Switzerland, November 2021
- 183. Presentation *Learning Content Management*, OER Conference swissuniversities, *online*, November 2021

5 Funded Grant Projects

- 2000-2006: PI, NSF Information Technology Grant ITR #0085921, *Investigation of a Model for Online Creation and Sharing in Educational Settings*
- 2001-2003: PI, Research Experience for Teachers (Supplement to NSF-ITR 0085921)
- 2001: PI, NSF Supplement *National SMETE Digital Library* with UC Berkeley
- 2002: Co-PI, NSF PGE/RES/PLN #0225215. *How does Technology Affect Gender Equity in Science Education? A Retrospective and Prospective Study*
- 2003-2009: Co-PI, NSF DUE #0243126. *Diagnostic Question Clusters: Development and Testing in Introductory Geology and Biology*
- 2004: PI, Concord Consortium, *Ready to Teach*
- 2007-2010: Co-PI, ELAN III, State of Lower Saxony, Germany, *eÜbungen*
- 2007-2011: Co-PI, NSF DUE #0717790. *Collaborative Research: Community development of an expanded Geoscience Concept Inventory: A webcenter for question generation, validation and online testing*
- 2013: Lehreⁿ Project, with Ostfalia University of Applied Sciences
- 2017: PI, American Physical Society, *Physics Education Games: From Proof-of-Concept to Publication*
- 2018: Collaborator, ETH Zurich, *Mixed-Reality Visualization of Scalar and Vector Fields*
- 2020: PI, Swiss National Science Foundation, *Scientific Exchange - ICED 2020* (cancelled due to COVID-19)
- since 2021: Co-PI, swissuniversities, *P-7: Lehrveranstaltungen für Alle - Barrierefreier Unterricht an Hochschulen*
- since 2021: Co-PI, swissuniversities, *P-8: Transversal computational thinking - supporting responsible computational problem solving across domains*
- since 2021: Co-PI, swissuniversities, *P-8: Mastering Open Educational Resources (OERs) and Open Educational Platforms (OEPs)*

6 Awards

- Scholarship, Studienstiftung des deutschen Volkes, 1988-1994
- Best Paper Award, IEEE Frontiers in Education Conference, 1998
- LON-CAPA: ComputerWorld 21st Century Achievement Award, Winner, Education & Academia Category, 2003

- LON-CAPA: Sloan-C, Most Outstanding Effective Practice Award, 2004
- Teacher Scholar Award, Michigan State University, 2008
- LON-CAPA/ELAN III/eÜbungen: European eLearning Award, Finalist, 2009
- Lyman Briggs College Graduating Class Honorary Faculty Certificate, 2010
- Lower Saxony, campusmerge award for excellent use of multimedia in postsecondary education (with Riegler group, Ostfalia University, project vitaMIN(T)), 2011
- American Physical Society, Outstanding Referee Award, 2012
- A Slower Speed of Light: Best Game - Student Category, Serious Games Showcase, I/ITSEC, 2013
- Einstein's Playground: Finalist, Jackson Hole Science Media Awards, 2016

7 Conferences Organized

- Organizer and Host: 2001 LON-CAPA Conference, Michigan State University, 30 participants from 15 institutions
- Organizer: 2002 LON-CAPA Conference, Florida State University, 56 participants from 22 institutions
- Organizer: 2003 LON-CAPA Conference, Truckee Meadows Community College, 72 participants from 28 institutions
- Organizer: 2004 LON-CAPA Conference, George Washington University, 70 participants from 29 institutions
- Organizer: 2005 LON-CAPA Conference, University of South Carolina, 74 participants from 24 institutions
- Host: 2005 Educause Summer Focus Session, Michigan State University, Rethinking the Classroom: Designs for Interaction, 75 participants from 36 institutions
- Organizer and Host: 2006 LON-CAPA Conference, Michigan State University, 86 participants from 28 institutions
- Organizer: 2007 LON-CAPA Conference, University of Illinois, 51 participants from 11 institutions
- Organizer: 2008 LON-CAPA Conference, Simon Fraser University, 45 participants from 13 institutions
- Organizer and Host: 2009 LON-CAPA Conference, Michigan State University, 47 participants from 15 institutions
- Co-Organizer: 2010 LON-CAPA Conference, Dalhousie University, 31 participants from 10 institutions
- Organizer: 2011 LON-CAPA Conference, Virginia Commonwealth University, 45 participants from 9 institutions
- Co-Organizer: 2012 LON-CAPA Conference, University of Illinois Urbana-Champaign, 32 participants from 8 institutions
- Organizer and Host: 2013 LON-CAPA Conference, Michigan State University, 23 participants from 8 institutions
- Organizer: 2014 LON-CAPA Conference, East Lansing, MI, 37 participants from 15 institutions
- Organizer and Host: 2015 LON-CAPA Conference, Michigan State University, 30 participants from 9 institutions
- Co-Organizer: 2016 LON-CAPA Conference, Purdue University, 22 participants from 5 institutions
- Organizer and Host: 2017 LON-CAPA Conference, Michigan State University, 21 participants from 7 institutions

- Co-Organizer: 2018 LON-CAPA Conference, Purdue University, 22 participants from 5 institutions
- Co-Organizer: 2019 LON-CAPA Conference, University of Illinois, 19 participants from 6 institutions
- Co-Organizer: 2020 Tag Hindernisfreie Lehre, ETH Zurich, > 50 participants
- Co-Convener: 2020 International Consortium for Educational Development Conference, ETH Zürich, >400 participants registered, cancelled due to COVID-19
- Organizer and Co-Host: 2020 Workshop, Next Generation Learning Management System, ETH Zürich and FernUniversität in Hagen, 70 participants, moved online due to COVID-19
- Co-Organizer: 2021 European Women Rectors Association (EWORA) Webinar, *Rethinking Higher Education: Blended Learning*, 59 participants
- Organizer: DELFI 2021 Workshop, *A User-Model for a Next Generation Learning Management System*, 25 participants
- Co-Organizer: 2021 CampusSource/ETH Online Workshop, *BMBF open-source online Metabildungsplattform*, 127 participants
- Co-Organizer: 2021 OER Conference, *swissuniversities P-8 program*, 40 participants

8 Service

- LON-CAPA supporting 15,000 course enrollments/semester at MSU
- 1999-2003: MSU Service/Outreach Technology Committee (Chair 2002-2003)
- 2002-2007: MSU Instructional Computing Technology Committee (Chair 2006-2007)
- 2003: Faculty Advisory Board, MSU Science Theatre
- 2008-2011: MSU Faculty/Academic Council (Academic Governance)
- 2008: MSU Awards Committee
- 2012-2017: MSU University Committee on Faculty Affairs (UCFA)
- 2012-2017: MSU University Committee on Faculty Affairs Subcommittee on Budget (Chair 2013-2015)
- Doctoral Guidance Committees
- Event Supervisor, Michigan Science Olympiad State Tournament (10 years/events)
- Search Committees
- Service on NSF grant review panels
- Journal reviews for The Physics Teacher, The American Journal of Physics, Physical Review ST Physics Education Research, e-learning and education (elead), and Computers & Education
- since 2008: Editorial Board, e-learning and education (elead)
- since 2010: Advisory Board, NSDL Digital Resource Discovery project, Ecological Society of America
- since 2011: Faculty Working Group for Upper-Division Electricity and Magnetism, University of Colorado Physics Education Research Group
- 2013-2016: Scientific Advisory Board, Didaktik Zentrum (DiZ) Bayern
- 2016-2018: Faculty Advisor, Lyman Briggs College Maker Club
- 2017-2018: MSU International Studies and Programs, Advisory Consultative Committee
- 2017-2018: MSU Entrepreneurship and Innovation Faculty Advisory Committee
- since 2021: Vice-President, Swiss MOOC Service

9 Teaching

SS: Spring Semester; US: Summer Semester; FS: Fall Semester

- Michigan State University, NSC(SME) 865, *Technology for Teachers* (2 credits), US99, US00, US02
- Ingham Intermediate School District, *Capital Area Science and Math Improvement Initiative: Technology for Teachers* (teacher continuing education) , US99, US00, US01
- Michigan State University, PHY 232, *Introductory Physics II - Virtual University* (3 credits), SS01, SS02
- Michigan State University, PHY 231, *Introductory Physics I - Virtual University* (3 credits), FS01, FS02
- Michigan State University, LB(S) 271, *Introductory Physics I Calculus-Based* (3 credits), FS04, FS05, FS06, FS07, FS08, FS09
- Michigan State University, LB(S) 272, *Introductory Physics II Calculus-Based* (3 credits), SS05, SS06, SS07, SS08
- Michigan State University, LB(S) 492, *Senior Seminar Renewable Energy* (4 credits), US07, US09, FS13, FS14
- Michigan State University, PHY 905, *Physics Education Research* (2-3 credits), FS07, FS09, FS10
- Michigan State University, LB 490C, *Independent Study* (2-4 credits), SS08, FS09
- East Lansing High School, *Units on Light Scattering and Special Relativity* (2 weeks), US08
- Michigan State University, SME 862, *Physics for Teachers* (3 credits), US08, US10
- Michigan State University, LB 492/490E,PHY 305/405, *The History of Science in Europe (Study Abroad: Germany, Switzerland, Denmark)* (4 credits), US08, US11
- Michigan State University, LB 490C, *Relativistic Physics Game Development* (2-4 credits), SS09, FS09
- Michigan State University, LB 272L, *Introductory Physics II Calculus-Based Laboratory Course* (1 credit), SS09
- Michigan State University, LB 492, *The Modern Physics Revolution: 1905-1945* (4 credits), SS10
- Michigan State University, LB 273, *Introductory Physics I Calculus-Based Laboratory and Recitation Component* (equiv. 1 credit), FS10, FS12
- East Lansing High School, *The Physics of Superheroes and Other Impossible Physics* (lecture series), SS11
- Michigan State University, LB 274, *Introductory Physics II Calculus-Based Lecture Component* (equiv. 3 credits), SS11, SS13, SS16
- Michigan State University, LB 105C, *Preparatory - Physics - Virtual University* (1 credit), US12, US13
- Michigan State University, PHY 233B, *Calculus Concepts in Physics I - Virtual University* (2 credits), SS15
- Michigan State University, PHY 234B, *Calculus Concepts in Physics II - Virtual University* (2 credits), SS15
- Michigan State University, LB 492, *History of Computing* (4 credits), FS15, FS17
- Michigan State University, LB 492, *Mission to Mars* (4 credits), US16, FS16
- Michigan State University, PHY 215, *Thermodynamics and Modern Physics* (3 credits), FS16, FS18
- Michigan State University, LB290F/490A, *STEM Game Development* (1-4 credits), SS17
- Michigan State University, LB 274, *Introductory Physics II Calculus-Based Studio Physics* (4 credits), SS17, SS18
- East Lansing High School, *Advanced Placement Computer Science* (TEALS; team-teaching), FS17, SS18
- Michigan State University, LB 273, *Introductory Physics I Calculus-Based Studio Physics* (4 credits), FS18
- Michigan State University, UGS 200H, *Undergraduate Honors Research Seminar* (3 credits), FS18