**21st Century Learning Program**

A Revised Proposal for Continuing SHAPE 2.0

*3 February 2020*

*Prepared and Submitted by*

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# 21st Century Learning in the P-20 School

Over the last six years, the SHAPE (Schools and Higher Education Advancing Public Education Across the P-20 Spectrum) program between Missoula County Public Schools and the University of Montana has pushed the envelope of what 21st century education looks like in both theory and practice. In the second three-year phase of SHAPE (2016-2018), four hallmarks of 21st century learning surfaced across initiatives:

1. Inquiry-based learning that helps solve problems in novel and creative ways
2. Blended learning with analog and digital technologies
3. Expanded cognitive flexibility through language development and global awareness
4. Equity

These hallmarks stand in contrast to national policy reforms that were grounded in “adequate yearly progress” as measured through tests selected by each state and administered annually. The 21st Century Learning Program described here proposes to build on the four 21st century learning hallmarks shown above and potentially uncover more through the initiatives described below. In addition to describing continuing and new initiatives, we note SHAPE 2.0 initiatives that are now self-sustaining and will not continue in the next phase: Global Competence, Professional Learning Communities, and International Baccalaureate at UM. The Early Interventions initiative in SHAPE 2.0 will become the Early Childhood Education initiative, and the Dual Language Immersion initiative in SHAPE 2.0 will become the Language Development initiative in the 21st Century Learning Program. The new and continuing initiatives outlined below were developed in collaboration with faculty at the University of Montana and staff at Missoula County Public Schools.



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# Completed Initiatives

Global Competence

Professional Learning Communities

International Baccalaureate at UM

# Continuing and New Initiatives

## Language Development (formerly Dual Language Immersion)

**Principal Investigators**:

* *Kate Brayko*, Ph.D., Associate Professor, Department of Teaching and Learning

**MCPS Leads:**

* *Elise Guest*, Ed.D., Executive Director of Teaching and Learning
* *Karen Allen*, Executive Regional Director
* *Shirley Lindberg*, English Language Learner Coordinator
* *Aria Peters*, English Language Learner Coordinator

**Arlee Public Schools Lead:**

* *Adele Martin*, Salish Language Teacher, Arlee Public Schools

**Goal**: This initiative will support, deepen, and expand second language learning in Missoula County Public Schools (MCPS) by implementing High Impact Educational Practices (HIPs) with UM students.

**Summary:** We use language every day for myriad purposes from communicating to accomplishing a wide range of tasks and social goals. Developing a broader and deeper array of language proficiency can bolster one’s capacity to think critically, communicate more precisely and effectively, learn specialized information and skills, and more deeply understand, engage with, and solve problems [(Lightbrown and Spada 2006)](https://www.zotero.org/google-docs/?j714nk). Developing a second (or third or fourth) language in addition to one’s home language has well-documented cognitive benefits and social benefits as well as implications for individuals’ welfare and chances for economic independence [(Valdes 2001)](https://www.zotero.org/google-docs/?RhGdze). Over the next three years, we propose to support, deepen, and expand language learning in Missoula County Public Schools through the use of High Impact Educational Practices (HIPs)[[1]](#footnote-1) with UM and K-12 students in several ways: 1) through professional development for teachers to develop and implement responsive teaching practices for language learners; 2) through formal internships for UM students will support second language instruction in elementary and middle schools; 3) by procuring instructional materials for schools and classrooms; 4) by designing a sustained partnership between MCPS and UM’s teacher education programs in which teacher candidates would engage with MCPS’s quickly growing language learner student population; and, 5) by researching the impact of the in-service and pre-service professional development efforts. In additional to local efforts, UM will establish partnerships with an array of linguistically diverse schools across the region to support language learning in K-12 settings and develop effective ways to prepare pre-service teachers for doing so.

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| **Budget** | **Year 1** | **Year 2** | **Year 3** | **Total** |
| UM | $28,900 | $32,400 | $32,900 | $94,200 |
| MCPS | DLI: $20,000ELL: $20,000 | DLI: $10,000ELL: $20,000 | DLI: $20,000ELL: $20,000 | DLI: $50,000ELL: $60,000 |
| **Total** | $68,900 | $62,400 | $72,900 | **$204,200** |

Language Immersion

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| **Deliverables** | **Year 1** | **Year 2** | **Year 3** |
| *Build capacity in knowledge of language development* | Send a Paxson staff member to GLAD training Train DLI coordinator in Guided Language Acquisition Design (GLAD) | Provide GLAD training for staff at Paxson Elementary and Washington Middle Schools | Continue staff development to further build capacity in GLAD strategies in all classrooms at Paxson and DLI Spanish classes at Washington |
| *Build teacher capacity in district initiatives* | Classroom teaching materials including Evaluación del Nivel Independiente de Lectura (ENIL) classroom libraries | Curriculum for Washington dual languages classesSummer professional development in GLAD | Additional Spanish language materials to support curriculum |
| *Develop and implement a language assessment plan* | Purchase hardware for ACTFL (American Council on the Teaching of Foreign Languages) Assessment of Performance toward Proficiency in Languages AAPPL assessment—grade 5 | Full implementation of AAPPL assessment for grade 5 at Paxson | Continued implementation of AAPPL assessment for grade 5 at PaxsonPurchase hardware for AAPPL assessment—grade 8 Full implementation of AAPPL assessment for grade 8 at Washington |

ELL and Indigenous Language Partnerships

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| **Deliverables** | **Year 1** | **Year 2** | **Year 3** |
| *Amplify teacher supports for language learners through training and materials* | Semester-long professional development course on responsive language instruction for teachers. Study efficacy and impact of targeted professional development. | Semester-long professional development course on responsive language instruction for teachers. Study efficacy and impact of targeted professional development. | Semester-long professional development course on responsive language instruction for teachers.Study efficacy and impact of targeted professional development. |
| *Bolster teacher preparation efforts by creating opportunities for UM candidates to directly support increasingly diverse K-12 student populations.*  | Establish *Inclusion and Integration Clinical Experience.* UM candidates intern in local classrooms with a focus on differentiating instruction for linguistically diverse groups.Study efficacy and impact. | Grow and refine *Inclusion and Integration Clinical Experience.* UM candidates intern in local classrooms with a focus on differentiating instruction for linguistically diverse groups. Study efficacy and impact. | Grow and refine *Inclusion and Integration Clinical Experience.* UM candidates intern in local classrooms with a focus on differentiating instruction for linguistically diverse groups. Study efficacy and impact. |
| *Cultivate partnerships between UM, public, and tribal schools to support language learning* | Establish language partnership between UM and K-12 schools in the Flathead ValleyStudy efficacy and impact of targeted professional development. | Establish language partnership between UM and K-12 schools in southern MontanaStudy efficacy and impact of targeted professional development. | Establish language partnership between UM and K-12 schools in northeast MontanaStudy efficacy and impact of targeted professional development. |
| *Dissemination of research* | Manuscript and conference paper preparation and presentation | Manuscript and conference paper preparation and presentation | Manuscript and conference paper preparation and presentation |

## International Baccalaureate

**MCPS Leads:** *Elise Guest,* Ed.D., Executive Director of Teaching and Learning

**Goal:** The continuation of the International Baccalaureate (IB) initiative will enable MCPS to development a vertical pathway, from the Primary Years Programme (K-5), to the Middle Years Programme (6-8), to the IB Diploma Programme (9-12).

**Summary:** As a result of the generous funding from previous SHAPE grants, UM faculty and MCPS staff have worked collaboratively to develop a leading International Baccalaureate (IB) program across the state as well as region. While UM developed and launched an IB certificate program in Teaching and Learning as part of SHAPE 2.0 to prepare pre- and in-service educators to teach in IB programs, the work of the K-12 school district requires more time to fully roll out a vertically integrated set of IB programs in the elementary, middle, and high school grades. With the initial implementation of Montana’s first Primary Years Programme at Lewis and Clark Elementary School, both institutions focused on the development of key pre-service trainings and a certification course that established Missoula as a leader in the IB community. Further expansion of the IB Diploma Programme at both Hellgate High School and Big Sky High School underscores the commitment to IB tenets of best inquiry-based teaching and learning practices. Such efforts continue as Franklin Elementary School and Washington Middle School are recognized as candidates for authorization to become IB schools. Continued funding of IB will enable MCPS to establish a strong, vertical pathway by implementing all three IB Programmes: Primary Years Programme (K-5), Middle Years Programme (6-8), and Diploma Programme (9-12) and expanding efforts to provide high leverage teacher training in inquiry-based teaching and learning practices.

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| **Budget** | **Year 1** | **Year 2** | **Year 3** | **Total** |
| UM | $0 | $0 | $0 | $0 |
| MCPS | $60,000 | $30,000 | $30,000 | $120,000 |
| **Total** | $60,000 | $30,000 | $30,000 | **$120,000** |

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| **Deliverables** | **Year 1** | **Year 2** | **Year 3** |
| *Expand professional development for all IB teachers* | Expand teacher professional development in Lewis and Clark Elementary School, Big Sky High School and Hellgate High School to meet IBO professional development requirements  | Expand Year 1 professional development practices to include the newly accredited Franklin Elementary School. | Expand Year 2 professional development practices to include the newly accredited Washington Middle School. |
| *Confirm newly identified MCPS schools to meet IB candidacy requirements, as part of a strengthened vertical articulation.* | Confirm Franklin Elementary School’s IB accreditation as a Primary Years Programme school. and Washington to meet candidacy and accreditation requirements through curriculum development, professional development, and community partnership  | Confirm Washington Middle School’s IB accreditation as a Middle Years Programme school. | Establish vertical alignment between the Primary Years Programme at Lewis and Clark to the Middle Years Programme at Washington Middle School to the IB Diploma Programme at Big Sky and Hellgate High School. |

## STEAM

### STEM

**Principal Investigators:**

* *Martin Horejsi*, Ph.D., Associate Professor, Department of Teaching and Learning
* *Georgia Cobbs*, Ph.D., Professor, Department of Teaching and Learning

**MCPS Lead:**

* *Julie Robitaille*, Executive Regional Director

**Goal:** UM faculty will continue to train pre-service and in-service teachers in MCPS and districts regionally in Project Lead the Way’s (PLTW) inquiry-based approaches to science, technology, engineering, and mathematics.

**Summary:** Recognized as a PLTW regional training hub, the University of Montana has offered a number of workshops for K-12 students and their teachers around the region in STEM fields. Through collaboration, research and evidence-based design thinking, and problem-based active learning, PLTW emphasizes an inquiry-based approach to teaching and learning using both analog and digital technologies. UM faculty will continue to train pre-service teachers in these approaches as well as support in-service teachers as they learn to implement such practices in their classrooms. As part of the ongoing expansion of PLTW regionally, UM faculty will work with K-12 partners to understand unique school needs and offer tailored training and support. In turn, MCPS will continue to align K-12 science and math curricula with PLTW approaches.

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| **Budget** | **Year 1** | **Year 2** | **Year 3** | **Carryover Applied (see detailed budget file)** | **Total** |
| UM | $32,200 | $29,270 | $29,263 | ($65,733) | $25,000 |
| MCPS | $30,000 | $30,000 | $30,000 | $- | $90,000 |
| **Total** | $62,200 | $59,270 | $57,263 | ($65,733) | **$115,000** |

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| **Deliverables** | **Year 1** | **Year 2** | **Year 3** |
| *Professional development for pre-service teachers* | Incorporate PLTW learning and teaching framework into science and math teaching methods courses at UM | Incorporate PLTW learning and teaching framework into science and math teaching methods courses at UM | Incorporate PLTW learning and teaching framework into science and math teaching methods courses at UM |
| *Professional development for in-service teachers* | Professional development workshops for in-service teachers in MissoulaProfessional development workshops for in-service teachers around the region | Professional development workshops for in-service teachers in MissoulaProfessional development workshops for in-service teachers around the region | Professional development workshops for in-service teachers in MissoulaProfessional development workshops for in-service teachers around the region |

### Arts Integration

**Principal Investigator:**

* *Karen Kaufmann*, UM College of Visual & Performing Arts

**MCPS Leads:**

* *Julie Robitaille*, Executive Regional Director
* *Sienna Solberg*, Director, SPARK! Arts Ignite Learning

**Goal:** The arts integration initiative, through SPARK! and Any Given Child, will continue to expand teacher training to ensure that students have access to learning experiences that magnify engagement and achievement as well as bolster school communities.

**Summary:** This request for funding for Arts Integration continues a highly successful collective impact partnership designed to increase integrated arts activities for K-8 students and develop arts-rich schools in Missoula and beyond. The new iteration of the project focuses on targeted training and support for K-5 educators and school administrators based on school needs; continued development for teaching artists; and the development of arts integrated curriculum. Data from SHAPE 2.0 shows that K-12 students who participate in classes in which the arts are integrated systematically perform collaboratively and confidently across academic programs. The arts integration initiative will contribute to academic achievement, improve Missoula County Public Schools (MCPS) teaching practices, and promote social and emotional development for students. Through this work, MCPS will become a model for other school districts seeking to integrate the arts. Arts integration is infused in 21st century learning and teaching by drawing from inquiry-based instruction, incorporating analog and digital technologies, and providing equitable access and collaboration opportunities to students.

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| **Budget** | **Year 1** | **Year 2** | **Year 3** | **Total** |
| UM | $30,000 | $30,000 | $50,500 | $110,500 |
| MCPS | $30,000 | $30,000 | $51,000 | $111,000 |
| **Total** | $60,000 | $60,000 | $101,500 | **$221,500** |

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| **Deliverables** | **Year 1** | **Year 2** | **Year 3** |
| *Professional development for teachers* | Provide arts integration professional development for teachers regionally through Creative Pulse | Provide arts integration professional development for teachers regionally through Creative Pulse | Provide arts integration professional development for teachers regionally through Creative Pulse |
| *Ongoing arts integration implementation and evaluation* | Continue arts integration development in elementary and middle schools with attention given to planning, feedback and continuous improvement through data analysis. | Continue arts integration development in elementary and middle schools with attention given to planning, feedback and continuous improvement through data analysis. | Continue arts integration development in elementary and middle schools with attention given to planning, feedback and continuous improvement through data analysis. |
| *Regional arts integration conference* |  | Plan for 2nd regional arts integration conference | Host 2nd regional arts integration conference |

## School Climate

### Project RECESS

**Principal Investigator:**

* *Trent Atkins*, Ph.D., Professor, Department of Teaching and Learning

**MCPS Leads:**

* *Karen Allen*, Executive Regional Director
* *Carol Ewen*, MTSS Coordinator

**Goal:** Project RECESS will reduce negative behaviors and increase positive behaviors on playgrounds at schools in MCPS that have high incidences of disciplinary referrals through the Multi-Tiered System of Supports, an evidence-based high impact pedagogical and learning framework.

**Summary**: Anecdotally, we have known that recess is one of the most dangerous activities during a school day that promotes some of the most negative behaviors from students. We have known for more than two decades through the systematic collection of data that this anecdotal assertion is true [(Colvin and Lowe 1986; Lewis, Colvin, and Sugai 2000)](https://www.zotero.org/google-docs/?3Y8gK1). This does not have to be the norm, though. By using the Multi-Tiered System of Supports (MTSS)—an evidence-based high impact framework for teaching and learning—both inside the classroom and on the playground to manage student behaviors, recess can be a positive, creative, and health learning activity [(Nelson, Smith, and Colvin 1995; Teerlink et al. 2017)](https://www.zotero.org/google-docs/?ZyAlB3). Pre-service teachers at UM will learn to design and implement MTSS practices on the playground in concert with their regular clinical placement in the classroom. These pre-service students will design and implement effective strategies and stations on playgrounds that, through collaboration between UM and MCPS, can be sustained. This process will address two things simultaneously: 1) pre-service teachers will provide additional levels of supervision and keep students actively engaged in positive, healthy activities during recess, likely resulting in a reduction of negative behaviors and an increase in positive behaviors; and, 2) Project RECESS will give UM students realistic clinical preparation in managing student behaviors—an area where we need continuous improvement in preparing our future teachers.

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| **Budget** | **Year 1** | **Year 2** | **Year 3** | **Carryforward Applied (see detailed budget file)** | **Total** |
| UM | $33,333 | $33,333 | $33,334 | ($30,000) | $70,000 |
| MCPS | $0 | $0 | $0 | $0 | $0 |
| **Total** | $23,000 | $23,000 | $24,000 | ($30,000) | **$70,000** |

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| **Deliverables** | **Year 1** | **Year 2** | **Year 3** |
| *Identify school sites* | Identify 1-2 elementary and/or middle school sites based on disciplinary referrals, consultation with school leaders, and playground observation (1-2 schools total) | Identify 1-2 elementary and/or middle school sites based on disciplinary referrals, consultation with school leaders, and playground observation (2-4 schools total) | Identify 1-2 elementary and/or middle school sites based on disciplinary referrals, consultation with school leaders, and playground observation (3-6 schools total) |
| *Teacher candidates work in RECESS schools* | 2-4 elementary education teacher candidates are assigned to identified RECESS school for their clinical placementTeacher candidates adapt and implement MTSS protocols in cooperating classroom and on playground | 2-4 elementary education teacher candidates are assigned to identified RECESS school for their clinical placementTeacher candidates adapt and implement MTSS protocols in cooperating classroom and on playground | 2-4 elementary education teacher candidates are assigned to identified RECESS school for their clinical placementTeacher candidates adapt and implement MTSS protocols in cooperating classroom and on playground |
| *Data collection and analysis* | Collect and analyze School-Wide Information System (SWIS) dataCollect and analyze teacher candidate evaluation surveyCollect and analyze observational data | Collect and analyze School-Wide Information System (SWIS) dataCollect and analyze teacher candidate evaluation surveyCollect and analyze observational data | Collect and analyze School-Wide Information System (SWIS) dataCollect and analyze teacher candidate evaluation surveyCollect and analyze observational data |
| *Dissemination of research* | Manuscript and conference paper preparation and presentation | Manuscript and conference paper preparation and presentation | Manuscript and conference paper preparation and presentation |

### School Safety

**Principal Investigator:**

* *Dan Lee*, Ed.D., Associate Professor, Department of Educational Leadership

**MCPS Leads:**

* *Karen Allen*, Executive Regional Director
* *Carol Ewen*, MTSS Coordinator

**Goal:** The Montana Safe Schools Center will work with MCPS to develop school safety measures that address the physical security of school buildings and those that foster a healthy school climate.

**Summary**: Tragic events such as last February's shooting at Marjory Stoneman Douglas High school in Parkland, Florida followed by a shooting in May at Santa Fe High School in Santa Fe, Texas

give educators reason to stop and seriously consider how we can keep our students safe. Surely,

the installation of cameras, locked doors, and school resource officers (SROs) will prevent a

similar event in Missoula. But then both Marjory Stoneman Douglas and Santa Fe high schools

were equipped with video surveillance cameras, locked their doors, and both schools employed

SROs. Despite their limitations, cameras, locked buildings and SRO's go a long way to assuage the fears of

concerned parents and community members [(Jonson 2017; James and McCallion 2013)](https://www.zotero.org/google-docs/?TtsKco). This is a huge conundrum for school leaders. Schools are not military installations or jails. According to Newman, Fox, Harding, Mehta and Roth [(2005)](https://www.zotero.org/google-docs/?JMOOfc), in almost every school shooting incident, other students knew about the impending threat and yet said nothing.

How do we avoid the corrosive effects of target hardening, increased police presence and

greater emphasis on punitive disciplinary efforts? What are the best approaches to ensuring student

safety? Researchers have found that a school climate that emphasizes social trust by cultivating skills like conflict resolution, peer mediation, student-centered teaching, and effective leadership foster safe schools [(Morrill and Musheno 2018; Turk 2018; Fronius et al. 2016; Allensworth and Hart 2018)](https://www.zotero.org/google-docs/?p2AVRf). Developing a positive and safe school climate requires a team effort and every good team needs a skilled coach. The Montana Safe Schools Center will work with MCPS to develop school safety measures that address the physical security of school buildings and those that foster a healthy school climate.

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| **Budget** | **Year 1** | **Year 2** | **Year 3** | **Carryforward Applied (see detailed budget file)** | **Total** |
| UM | $41,600 | $41,600 | $41,600 | ($51,000) | $73,800 |
| MCPS | $10,000 | $10,000 | $10,000 | $0 | $30,000 |
| **Total** | $51,600 | $51,600 | $51,600 | ($51,000) | **$103,800** |

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| **Deliverables** | **Year 1** | **Year 2** | **Year 3** |
| *Professional development for K-12 school staff and administrators* | Collaborate with high school administrators and staff to identify critical needs in preventive and emergency response training | Collaborate with middle and elementary school administrators and staff to identify critical needs in preventive and emergency response training | Collaborate with middle and elementary school administrators and staff to identify critical needs in preventive and emergency response training |
| *School safety retreat* | Offer tailored professional development workshops for high school administrators and staff on effective practices in school safety and establishing measurable school-level goals | Offer tailored professional development workshops for middle and elementary school administrators and staff on effective practices in school safety and establishing measurable school-level goals | Offer tailored professional development workshops for middle and elementary school administrators and staff on effective practices in school safety and establishing measurable school-level goals |
| *Data collection and analysis* | Collect and analyze data to determine efficacy of practices and need for adjustment | Collect and analyze data to determine efficacy of practices and need for adjustment | Collect and analyze data to determine efficacy of practices and need for adjustment |
| *Dissemination of research* | Manuscript and conference paper preparation and presentation | Manuscript and conference paper preparation and presentation | Manuscript and conference paper preparation and presentation |

## Universal Design for Learning

**Principal Investigator:**

* *Morgen Alwell*, Ph.D., Professor, Department of Teaching and Learning

**MCPS Leads:**

* *Karen Allen*, Executive Regional Director
* *Theresa McGeary*, Occupational Therapist

**Goal:** The Universal Design for Learning (UDL) initiative will study the efficacy of UDL across a range of analog and digital technologies in upper elementary school, middle school, and university settings.

**Summary**: UDL is captured in a carefully constructed framework for analyzing curricula and designing effective instruction that is accessible through multiple modalities to students [(Meyer, Rose, and Gordon 2014)](https://www.zotero.org/google-docs/?r9sfdY). Grounded in cognitive neuroscience and the learning sciences, and premised on addressing expected learner variability at the outset, application of the UDL framework is designed to systematically remove barriers and build competencies toward expert learning for all. Practitioners design explicit goals, assessments to measure progress toward goals, and instruction incorporating multiple means of: engagement (honoring the critical role of affect in learning), representation (supporting learning through varied modes and scaffolds), and action and expression (diverse ways to interact with content and express learning). Despite growing knowledge leading to refinements of the UDL framework (see 2008, 2011, 2014, and 2018 iterations at <http://udlguidelines.cast.org>), the efficacy literature on UDL application impact remains limited. To contribute, a systematic review and four empirical studies are proposed in this project. The first is a systematic review of the implementation of UDL and its efficacy in K-12 learning environments. The second study will examine the impact of specific classroom UDL applications in upper elementary school settings. The third study will examine the impact of specific classroom UDL applications in middle school settings. And, the final study is designed to capture UDL impact in higher education classrooms.

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| **Budget** | **Year 1** | **Year 2** | **Year 3** | **Carryforward Applied (see detailed budget file)** | **Total** |
| UM | $34,000 | $34,000 | $35,000 | ($29,000) | $73,000 |
| MCPS | $0 | $0 | $0 | $0 | $0 |
| **Total** | $34,000 | $34,000 | $35,000 | ($29,000) | **$73,000** |

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| **Deliverables** | **Year 1** | **Year 2** | **Year 3** |
| *Meta-analysis of existing research on UDL practices and technologies* | Collect and analyze findings of qualitative and quantitative studies on UDL since 2008Manuscript preparation and submission | Manuscript revisions and resubmission/ publication |  |
| *Research on UDL applications in 4th and 5th grade classrooms with students identified with disabilities and those at-risk of failing school*  | Design and conduct quasi-experimental study, collecting data on use of digital literacy tools in intervention and control classrooms | Analyze dataManuscript preparation and submission  | Manuscript revisions and resubmission/ publication |
| *Research on UDL applications in middle school language arts classrooms with students with heterogeneous learning characteristics* |  | Design and conduct quasi-experimental study, collecting data on use of digital literacy tools in intervention and control classrooms | Analyze dataManuscript preparation and submission  |
| *Small group of UM faculty analyze UDL practices and technologies in their content curricula and in their higher education classrooms*  |  | Professional development for small group of UM faculty to incorporate UDL features into the classes they teachUsing a mixed methods research design, UM faculty analyze their content curricula and classroom practices and technologies against UDL framework | Analyze dataConference/manuscript preparation and submission  |

## Early Childhood Education

**Principal Investigators:**

* *Kate Brayko*, Ph.D., Associate Professor, Department of Teaching and Learning
* *Jingjing Sun*, Ph.D., Assistant Professor, Department of Teaching and Learning

**MCPS Leads:**

* *Julie Robitaille*, Executive Regional Director
* *Karen Allen*, Executive Regional Director

**Goal:** This initiative will examine the impact of field experiences in both informal and formal settings on pre-service early childhood education teachers’ understanding of children’s language development.

**Summary**: The importance of mentoring pre-service educators in their efforts to apply developmentally appropriate knowledge, theories, strategies, and practices is well recognized in the early childhood profession. Research demonstrates that pre-service teachers typically enter a teacher education program with preconceived ideas of what it means to be a teacher [(Bransford, Brown, and Cocking 1999)](https://www.zotero.org/google-docs/?fEhs9g). These initial conceptions are often limited and include developmentally inappropriate understandings of children, which are frequently difficult to change [(Pajares 1992; Yerrick and Hoving 2003)](https://www.zotero.org/google-docs/?mUTB1D). However, experience in the field accompanied by guided reflections can assist in changing both beliefs and practices [(Fives and Buehl 2012)](https://www.zotero.org/google-docs/?wyutar). In addition, research has shown that practicum in informal settings, such as children’s science museums, can provide critical opportunities for pre-service teachers to change their assumptions about learning and development [(Jurow et al. 2012)](https://www.zotero.org/google-docs/?Qybg92).

Over the next three years, we will study cohorts of pre-service teachers engaged in clinical experiences in a range of early childhood settings, both formal (e.g., PJWCoE’s LAB Preschool) and informal (e.g., SpectrUM, Missoula Children’s Museum). We will investigate the understandings and skills of pre-service teacher candidates, with a particular interest in each context’s affordances for novice teachers’ professional learning related to children’s language and concept development. We anticipate that by offering pre-service teacher candidates opportunities to think about language and concept development across learning contexts, they will be more likely to establish a comprehensive understanding of learning and development, and the skills to scaffold personally engaging, linguistically rich, and intellectually stimulating conversations with children.

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| **Budget** | **Year 1** | **Year 2** | **Year 3** | **Carryforward Applied (see detailed budget file)** | **Total** |
| UM | $30,000 | $30,000 | $30,000 | ($20,000) | $70,000 |
| MCPS | $50,000 | $40,000 | $41,000 | $0 | $131,000 |
| **Total** | $80,000 | $70,000 | $71,000 | ($20,000) | **$201,000** |

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| **Deliverables** | **Year 1** | **Year 2** | **Year 3** |
| *Professional development for teachers* | Professional development for Early Childhood teachers to attend High Scope curriculum training. | Professional Development workshops to develop understanding of the High Scope curriculum | Professional Development workshops to expand understanding of the High Scope curriculum |
| *Establish a kindergarten readiness assessment practices* | Identify and adopt a Kindergarten Readiness Assessment | Implement and develop the use of a Kindergarten Readiness Assessment | Establish Kindergarten Readiness Assessment practices |
| *Pre-service teacher education*  | Planning sessions while new LAB classrooms and new clinical partner sites move and settle in. Collect baseline data.  | Establish informal clinical sites with SpectrUM, Insectarium, Missoula Art Museum, etc.Cohort 1 placed in ECE settingsData collection (formative and summative assessments of candidates’ understandings and skills) | Cohort 2 placed in ECE settingsData collection (formative and summative assessments of candidates’ understandings and skills)Analyze dataConference/manuscript preparation and submission |

## Digital Learning

**Principal Investigators:**

* *Robert Currie*, Executive Director, Montana Digital Academy
* *Jason Neiffer*, Ed.D., Assistant Director/Curriculum Director, Montana Digital Academy
* *Mike Agostinelli*, Instructional Program Director, Montana Digital Academy

**MCPS Leads:**

* *Julie Robitaille*, Executive Regional Director
* *Kevin Ritchlin*, Principal at Willard Alternative Program

**Goal:** The Montana Digital Academy (MTDA), in collaboration with MCPS, will develop and implement a flexible, online learning program for students who are homebound or transient, who experience severe anxiety, or who participate in alternative education programs.

**Summary**: Students in schools of all types and sizes in the 21st century have needs that are becoming more and more challenging to address. For a variety of reasons, numerous students are not able to fit into the parameters of a school’s daily, weekly or semester schedule. Personal situations ranging from physical and emotional challenges to transiency due to uncertain home, family or other circumstances often interrupt their regular attendance at school. This can cause students to fall into a downward spiral of failing classes to the point that they may have extreme difficulty recovering, if at all. Because of this schools, search for a way to help these students; unfortunately, they are quite often unable to do so before the students fall significantly behind. It has become clear to us that this new model needs to allow for an individual, personalized approach that can be adapted to each student and the school’s unique situation.

The new solution is a partnership approach with the local school district to blend the use of MTDA digital services and teacher training with local support from teachers and other staff supplied by the district. We are seeking a proof of concept in our partnership with MCPS that could be replicated and offered on a statewide basis. In partnership with the Missoula County Public Schools, MTDA will develop and implement a world-class, district-based, distance-learning program to address these student challenges. This newly developed program will utilize MTDA teacher training, course assets, learning management software (Blackboard OpenLMS, based on Moodle), student information system, and support services in a partnership to create a flexible course delivery model to meet the needs of unique populations served in MCPS high schools. MCPS will provide teacher resources, including content instructors, counselors, special education teachers, tutors, and other support staff. MTDA has named this the “Affiliate” model, which allows a district like MCPS essentially to create an internal franchise of our distance-learning program allowing custom adaptations and local school control of all aspects of the timing and duration of each student’s course.

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| --- | --- | --- | --- | --- |
| **Budget** | **Year 1** | **Year 2** | **Year 3** | **Total** |
| UM | $33,700 | $16,700 | $16,600 | $50,000 |
| MCPS | $8,000 | $25,000 | $25,000 | $75,000 |
| **Total** | $41,700 | $41,700 | $41,600 | **$125,000** |

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| --- | --- | --- | --- |
| **Deliverables** | **Year 1** | **Year 2** | **Year 3** |
| *Professional development for teachers*  | Support district teachers in tailoring learning courses and modules for students, including PD and stipends for work beyond the CBA. | Support district teachers in tailoring learning courses and modules for students | Support district teachers in tailoring learning courses and modules for students |
| *Students take MTDA courses* | Students participate in courses tailored to their needs | Students participate in courses tailored to their needs | Students participate in courses tailored to their needs |
| *Data collection and analysis* | Collect and analyze anonymized student course completion and pass/fail dataAnalysis of anonymized student data on persistence across courses and high school graduationStudent Perception Survey data collected and analyzedTeacher interview data collected and analyzed | Collect and analyze anonymized student course completion and pass/fail dataAnalysis of anonymized student data on persistence across courses and high school graduationStudent Perception Survey data collected and analyzedTeacher interview data collected and analyzed | Collect and analyze anonymized student course completion and pass/fail dataAnalysis of anonymized student data on persistence across courses and high school graduationStudent Perception Survey data collected and analyzedTeacher interview data collected and analyzed |

## Additional Categories

### Program Director

The Program Director on the University of Montana’s side of the 21st Century Learning Program oversees and supports all of the research aspects of the grant program and liaises directly with Missoula County Public Schools. As part of this oversight, the Program Director prepares each of the quarterly reports, organizes and facilitates meetings between UM and MCPS, and coordinates communications about the various initiatives at national conferences and around the region. These activities require a significant amount of time, which the Program Director can recover through teaching buyouts each year.

### Graduate Research Fellow

The Graduate Research Fellow works closely with the Program Director to support research components of the various initiatives. This ranges from data collection, analysis, conducting literature reviews of existing research, and working with faculty to draft manuscripts for conference presentations and scholarly articles for publication.

### Infrastructure Costs

Infrastructure costs include the following:

* Equipment, supplies, and software that can be used across initiatives, by the Graduate Research Fellow, and Program Director
* Website development and maintenance
* Communications
* Printing
* Conference travel and fees for the Graduate Research Fellow and Program Director

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1. HIPs are practices that 1) require students to put forth purposeful effort, 2) help students build substantive relationships, 3) provide students with rich and frequent feedback, 4) enable students to integrate and apply what they are learning to new situations, and 5) encourage reflection that deepens learning and increases self-awareness [(](https://www.zotero.org/google-docs/?GyEbkZ)[G. D. Kuh et al. 2013](https://www.zotero.org/google-docs/?hTr1at); [G. Kuh, O’Donnell, and Geary Schneider 2017)](https://www.zotero.org/google-docs/?GyEbkZ). [↑](#footnote-ref-1)