



# Year 2, Quarter 1 Report

## The Context of SHAPE

The Schools and Higher Education Advancing Public Education (SHAPE) program began in 2012 with the goal of creating a collaborative model between public schools and universities to improve learning and teaching across the preschool to doctorate spectrum. The second round of SHAPE extends this goal with an emphasis on 21st century learning and teaching through the following initiatives: International Baccalaureate, Dual Language Immersion, Global Competence, Early Interventions, STEM, Arts Integration, Universal Design for Learning, Professional Learning Communities, and Digital Learning. Innovation through each of these initiatives is helping to shape the picture of what twenty-first century learning and teaching looks like from preschool through doctoral level education.

As SHAPE evolves, four hallmarks of twenty-first century learning in MCPS and at UM are surfacing. Each of those 21st century learning hallmarks and the SHAPE initiatives that support them are listed in the table below.

<b>21 Century Learning Hallmarks</b>	<b>SHAPE Initiatives</b>
Inquiry-based learning that helps solve problems in novel, creative ways	International Baccalaureate STEM Arts Integration Professional Learning Communities Blended Learning
Blended learning	Blended Learning STEM Universal Design for Learning Early Interventions
Expanded cognitive flexibility through dual language learning and global awareness	Dual Language Immersion Global Competence International Baccalaureate
Equity	Early Interventions Universal Design for Learning Professional Learning Communities Blended Learning International Baccalaureate Arts Integration

## Initiative Updates



The demand for International Baccalaureate (IB) offerings in MCPS and at UM continue to grow. Notably, the University's IB certificate program now appears in the [international directory](#) of universities offering IB training. This publicity has prompted several inquiries from international teachers into the program. To elaborate on what the UM program has to offer, Dr. Rudge has put together an [informational video](#) to share on the College website and through social media channels. As part of the program evaluation, Dr. Rudge has conducted a self-study on the collaboration with the IB school professionals; she has been selected to present at a teacher education conference in Århus, Denmark at the end of April. Graduate students who have been part of this program and who have been collecting their own research data are in the process of analyzing that data as their end-of-program thesis projects.

As candidates in UM's IB certificate program finish their coursework this spring, MCPS is preparing for expanding IB offerings for the 2017-2018 academic year. At Big Sky High School, for example, 18 10th graders have registered for courses in the IB Diploma Programme; 79 juniors and seniors have registered for IB Psychology; and, 75 students have registered both for the History of the Americas and IB English Year 1. Similar interest exists at Hellgate High school, where over 120 juniors and seniors have registered for IB History of the Americas, 192 have registered for IB English Language and Literature, 245 have registered for IB Math, and over 150 students have registered for IB Language. Other IB courses offered at both high schools, including Theory of Knowledge, Visual Arts, and IB Biology, have between 20 and 40 students registered for the coming academic year. More students have also enrolled in the rigorous IB Diploma Programme. The 2017-2018 academic year will see eleven second-year and eight first-year candidates at Big Sky High School over last year's zero second-year and 13 first year candidates; and, Hellgate High School will see 20 second-year candidates and 15 first-year candidates over last year's 15 second-year and 20 first year candidates. Later this spring, 30 students from Big Sky and 55 students from Hellgate High Schools will sit for IB exams. After testing, Hellgate students will experience programming at UM three separate times, learning how their IB coursework will serve as the credit-bearing foundation for majors at the University.

The support for IB programming at the elementary school level is likewise positive. In fact, over 320 students at Lewis and Clark Elementary and Franklin Elementary led their own parent-teacher conferences. Teachers at Franklin Elementary school have continued to develop their Primary Years Programme, crafting language on assessment policy, language policy, vision-mission-beliefs, and essential agreements, as well as their program of inquiry. These documents will ensure that the school's program is both horizontally and vertically articulated.

At Lewis & Clark Elementary School, the three Grade 5 teachers and 90 5th grade students are focused on the culminating Primary Years Programme Unit of Inquiry, the Grade 5 Exhibition. The theme for the exhibition unit is Sharing the Planet and the central idea is “Human use of the environment impacts ecosystems.” The 5th grade team has developed an exhibition guide for teachers and students to use as they begin their exhibition journey. To support this learning opportunity, mentor students from Hellgate High School are planning to come Lewis and Clark to guide the fifth grade students through the exhibition process.

In this quarter, MCPS teachers and administrators have attended workshops centered on Visual Arts, English, and evaluation, all of which are high needs areas for the district. With such high demand, MCPS and UM are training faculty in IB pedagogy, with particular planning focus given to the August Summer Institute and the courses to be offered, which include Theory of Knowledge and English Language and Literature for high school faculty and Transdisciplinary Learning and Science through the Program of Inquiry for elementary faculty.

As MCPS scales its IB programming, its IB teachers have worked with UM to co-teach with Dr. Lucila Rudge in the IB certificate program offered in the Department of Teaching and Learning. This collaboration extends into the K-12 schools themselves as UM teacher candidates work directly with IB teachers at Big Sky High School, Hellgate High School, and at the Missoula International School. We anticipate that these rich experiences will both create more opportunities for teacher candidates and IB cooperating teachers and demonstrate inquiry-driven pedagogy as a viable approach in non-IB courses.



The dual language immersion program at Paxson Elementary school continues to scale up as it plans for the 2017-18 academic school year with all kindergartners and 1st graders transitioning to be in the full immersion program, and all 5th graders will experience one-third of their school day in Spanish. Second grade classes will continue to have half of the students in DLI and half in English only, while third and fourth grade classes will immerse one-third of their students in both Spanish and English. To support these efforts, teachers are using new

technology to help deliver instruction through the use of Google apps and online Spanish language learning in the newly constructed computer lab. Also, five UM teacher candidates have been placed in Spanish immersion classrooms to learn from teachers and buttress their students’ learning. Dr. Kate Brayko has likewise offered a range of supports for teachers at Paxson that include ELLOPA/SOPA training for new teachers through the Center for Applied Linguistics, observational feedback of Spanish immersion teachers from both Dr. Brayko and Dr. Pablo Requena, the identification and prioritization of curricular materials to build students’

learning in Spanish, and ongoing meetings with teachers and administrators to adjust the existing Spanish immersion program. As a result of the work going on at Paxson Elementary, Drs. Brayko and Sun of UM are analyzing English literacy data and preparing for the presentation of their research later this year. They will make the case that language immersion is a viable option for students who attend schools in high-poverty neighborhoods.

The dual language immersion initiative has continued its expansion into Indian Country. Teacher candidates in UM's P-3 licensure programs have begun to connect with reservation schools studying Indigenous languages. Dr. Brayko is also in the process of arranging a clinical experience for M.Ed. students in literacy endorsement program to work with migrant children whose first language is Spanish.



The Global Competence initiative has continued to evolve to respond to student requests and align with adjustments with the Franke Global Leadership Initiative (GLI) at UM. This academic year a handful of MCPS students have expressed interest in participating in the Global Learning Pathway (GLP) at UM. To help facilitate this, Jeanne Loftus of UM, has joined a taskforce on campus to recognize and offer college credit for the IB courses that students take in high school. In addition, Loftus has worked to align the Global Learning Pathway program with the larger Global Leadership Initiative, streamlining the process for local high school students. For the next academic year, we anticipate that four students from Big Sky High School and eight students from Hellgate High School will join the Global Learning Pathway program. In collaboration with MCPS, Loftus has met with high school students and their families about these opportunities. Likewise, Loftus has been working with teachers at Willard High School to identify opportunities for them through the Franke GLI.

The efforts with the Global Learning Pathway program are promising. Evelyn Grey, one of GLP's first MCPS students, has committed to attending UM's exchange partner institution: Pontificia Universidad Catolica de Valparaiso in Valparaiso, Chile. This is part of the First-Year Study Abroad program that was developed as an option within the GLP program. Evelyn is currently a 12th grader at Hellgate High School, and she is enrolled in a GLI course entitled, Global Challenges and Leadership, as well as a preparatory study abroad course offered at UM.

During the second quarter, the IB coordinators at Big Sky and Hellgate High Schools will work with Loftus on the creation and implementation of a two-week summer institute for incoming MCPS 9th-12th graders that focuses on critical global issues and links the high school students to university faculty. Currently under development for the program are a website, an application for students, a list of human and physical resources, and a curriculum. Over the course of two weeks students will have the opportunity to work on campus, meet with faculty,

learn team building skills, and work on interdisciplinary projects that will model a GLI project. Students will present their projects to UM GLI students who will judge the final presentation. Monetary awards will be given to the winning team. We anticipate that that the institute will attract 30 MCPS students and will involve 5 MCPS teachers, 5 UM students, 5 UM faculty members, and 2 UM administrators.



Work in the STEM initiative continues at a rapid pace across three sub-initiatives: Project Lead the Way, Computational Thinking, and Design Thinking. Central to this initiative is Project Lead the Way (PLTW), a K-12 science curriculum grounded in problem-based learning. This quarter, Dr. Lisa Blank has trained 32 UM teacher candidates in PLTW, and she is co-planning a PLTW conference for May with Dr. Rich Bridges and Launch trainings to be held in Missoula, Billings, and Bozeman this summer. As the PLTW director for the state,

Blank has been examining student achievement data (MontCAS) in math and science in grades 4, 8, and 10 from 2008-2015 from Class A schools. Initial student achievement data for classes that have experienced PLTW as part of the STEM curriculum is encouraging—Hawthorne Elementary School, for example, has produced the highest student test scores in math and science in the entire state.<sup>1</sup> She is paying close attention to how PLTW integration influences (or not) math and science learning outcomes. Blank anticipates completing her analysis in the late summer.

Relatedly, Dr. Blank has been working closely with Kory Johnston, a seasoned MCPS teacher completing her doctorate in science education at UM. In her dissertation study, Johnston is examining PLTW training and implementation through professional learning communities, working with individual teacher, co-teaching PLTW lessons, and offering group trainings with Dr. Blank. Johnston is collecting and analyzing a range of qualitative and quantitative data for her study and will ultimately identify key factors that influence the degree of PLTW implementation in K-5 classrooms. These findings will be used to more effectively implement PLTW in all MCPS elementary schools and across the state.

As PLTW is more widely implemented in MCPS and across the region, the computer science teaching endorsement has proceeded without issue through the Board of Public Education and Montana University System Board of Regents. UM anticipates offering the endorsement beginning in the 2017-2018 academic year. To further computational thinking among in-service teachers, Dr. Blank evaluated a co-taught (UM and MCPS) course in the Python coding language at Sentinel High School in January, and she is co-planning a Python course for teachers in June

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<sup>1</sup> 63% of Hawthorne students earned a “proficient” or “advanced” score on the Smarter Balanced math assessment. MCPS as a whole had a total score of 50%, which ranks just behind Bozeman Public Schools (56%). Hawthorne’s students were the highest scoring elementary students among those from AA schools around the state.

with the UM Computer Science Department, MSU, Montana Tech, and SKC for which 20 teachers are enrolled, with four on the waiting list.

Finally, Blank is further developing opportunities for design thinking through spectrUM, SciNation, and the Salish/Pend d'Oreille and Kootenai Culture Committees. In planning for the launch of spectrUM at its new site, Blank has helped develop makerspaces, which can then move to the permanent spectrUM site (Missoula Culture House) in the new public library once it is completed. UM teacher candidates will be able to intern at spectrUM's makerspaces. The mobile makerspace on the Flathead Reservation is developing corresponding cultural making components that include beading, cordage, and drum building. The components have been co-developed with elders on the Flathead Reservation.



During the first quarter, the Arts Integration initiative ran three theatre-focused workshops for local teachers. The first workshop, *Creating Community in the Classroom*, demonstrated how teachers can use interactive, creative dramatics across grade levels and subject areas to build collaborative learning environments. Twenty-four teachers participated in this workshop. The second workshop, in which fourteen teachers participated, focused on the basics of theatre integration and how that articulates with 21st century learning,

brain research, and students' socio-emotional needs. Instructors Rosie Ayers and Jackalynn Snow demonstrated elementary and high school lessons for teachers and provided assessments that link the demonstrated lessons to specific content areas, including history and engineering. The third workshop provided seven in-service teachers with an intermediate-level seminar facilitating teachers' development of curricula that incorporates theatre into specific learning targets. In their evaluations, participants noted that the workshops were both creative and thought-provoking, providing avenues through which teachers might use theatre to help build their classroom communities and demonstrate subject-area content. One teacher noted, "I feel excited that several somewhat intimidating theater ideas now feel more do-able on my own. I want to do more 'story' acting in history that includes some more solid acting terms . . . I'm very excited about the Black Death simulation activity!"



Work in the Early Interventions initiative over the last quarter has entailed studying the preliminary results of the Parent Teacher Home Visit program at Rattlesnake Elementary and the Academic Parent Teacher Teams at Paxson and Franklin Elementary as well as developing a community-based

assessment tool. Within MCPS, teachers and administrators participating the the outreach programs for kindergarten and first grade surveyed families to learn about their perceptions of the Parent Teacher Home Visit (PTHV) and Academic Parent Teacher Teams (APTT).

The results of the Parent Teacher Home Visit surveys suggests that the program is very promising and should be continued and expanded, adjusting the approach based on teacher and family feedback. With a high 50% response rate, the survey results from the Parent Teacher Home Visit clearly affirm the program (see table below). 79% of respondents believe the home visits were useful and helped them feel more connected to the school. One parent wrote, “Because of my work schedule, I very rarely go to the school other than after most of the kids have left for the day. I rarely see his teacher and even more rarely see anyone else affiliated with the school. The home visit was a wonderful way to get to know his teacher a little bit and was tremendously helpful for my son in feeling connected to the school[,] getting rid of some of the jitters in starting kindergarten. I think it’s a great idea!” Several other parents suggested that the home visits would be even more helpful if they were conducted before the school year started. Next year, this is what teachers will do. To increase capacity to conduct home visits, MCPS trained 20 additional kindergarten and first grade teachers in addition to a counselor and coordinators of the Family Resource Center and Families in Transition in late February. The evaluation of this training affirmed the value of the program with two schools confirming that would conduct home visits before the 2017-2018 academic year. One teacher noted, “The personal testimony was inspirational and powerful.”

<b>PTHV Parent Survey Results</b>			
	<b>Not at All</b>	<b>Somewhat</b>	<b>Yes</b>
Would you recommend we continue home visits?	3%	9%	85%
Was your home visit useful?	6%	15%	79%
Did you feel more connected to the school after the visit?	6%	19%	75%

The parent survey results from the Academic Parent Teacher Teams were even more striking, with 100% of respondents affirming the program’s value (see table below). The program, which replaces conventional parent-teacher conferences, not only helped families feel more welcome at Paxson and Franklin, they also noted that the program helped them understand their child’s learning and how they could support that. Many of respondents wrote that they appreciated the opportunity to meet other families and exchange ideas about how to follow and buttress the growth of their students.

APTT Parent Survey Results				
	Not at All	Somewhat	Yes	Great Job
Staff welcomed me and made me feel comfortable.			5%	95%
APTT helped me feel confident in understanding my student's current progress and goals.			10%	90%
APTT gave me useful information to help my child succeed.		5%	15%	80%

At UM, Dr. Atkins has been working with four administrators and five community members to identify the early literacy and numeracy needs of young children and their families in area school districts and the communities they serve. This work has made apparent the need for a diagnostic assessment that families can give to their children. Dr. Atkins has thus shifted the focus of his work, employing graduate students to collect and analyze data from incoming kindergartners and their families that will inform the redesign and dissemination of the assessment he developed in SHAPE 1.0. Data collection will begin in May. The target outcome is for incoming kindergartners to thrive academically when they enter school.



Work in the Universal Design for Learning (UDL) initiative has been very exciting this quarter! Dr. Morgen Alwell has been working with district administrators to identify and support a MCPS school in becoming the first fully integrated UDL campus that would embed UDL strategies into all classrooms. To this end, Dr. Alwell has begun designing a course in collaboration with Dr. Dan Lee (Educational Leadership) and Dr. Trent Atkins (Teaching and Learning) for administrators and teacher-leaders to fully integrate UDL principles and methods into their practice. Work on this course will continue over the summer. Dr. Alwell will also be teaching C&I.518. Inclusion and Collaboration this summer, half of which is focused on UDL. Likewise, working with Marlene Zentz and Robert Squires of UM Online, Alwell is co-developing a Faculty Inquiry Project at UM for professors across the state to incorporate UDL into their teaching practices. If approved, this project would culminate in a half-day symposium showcasing university-based UDL practices. In addition to her teaching efforts, Dr. Alwell is studying the implementation of UDL in elementary and secondary schools. She is

finishing their study's literature review and is in the process of securing approval from the university's Institutional Review Board to conduct case study research.

Within MCPS, a Teaching and Learning taskforce has been working to implement UDL more widely across elementary, middle, and high schools and support teachers in doing so. In order to answer the question, "How effective is our core instruction across the spectrum of learners?" the district will integrate a universal K-9 screener to assess students' academic progress three times a year. Working from the premise that UDL is a central key to developing effective core instruction, the district will use data from the K-9 screener to adjust classroom pedagogy. This evidence-based approach to classroom practice will be a central feature of teacher professional development in the district. In addition, teachers will be trained in technology-based pedagogical tools that support UDL through Google Fest early in the second quarter.



PROFESSIONAL LEARNING  
COMMUNITIES

Professional Learning Communities (PLCs) are core catalysts of both professional development for teachers and administrators improving learning environments for students. To this end, grade level teams in all MCPS elementary schools, subject area teams in middle schools, and departments in high schools meet regularly to analyze student assessment data to inform and bolster curricular planning and teaching. At the elementary level, an instructional coach works with each grade level team every three weeks. At the middle school level, content-based teams meet daily to collaboratively plan instruction and analyze student performance data. At the high school level, faculty have been working to develop common assessments and student outcomes grounded in the content standards.

At the university, the focus of the PLC initiative is shifting. Recent research in the application of improvement science in education suggests that educational improvement and reform efforts can be both systematic and grounded in evidence through networked improvement communities, groups of schools districts and universities focused on various instructional issues. UM and MCPS are currently exploring how improvement science might be a core focus of PLCs as this initiative moves forward. As Dr. John Matt has stepped down as the initiative's lead, UM is exploring who might transition into this role.



BLENDED  
LEARNING

The Blended Learning initiative has been a focal point for MCPS and a central part of the mission of the Montana Digital Academy (MTDA). This spring MTDA offered a course for in-service teachers on the principles of blended learning. Five teachers took the course, which was led by four administrators

from Lolo, Hamilton, and Whitefish, for graduate credit. Projects within course ranged from a kindergarten immersive reading and comprehension program to project-based blended learning course at an alternative high school to a blended dual credit home economics course. Eleven teachers and five administrators from Lolo, St. Ignatius, Hamilton, and Whitefish expressed initial interest for the course but were unable to complete the course.

MCPS has now hosted all seven Google Cadre sessions with administration, classroom teachers and instructional assistants. MCPS is planning for our culminating event on Monday April 24<sup>th</sup>, 2017. This Pupil Instruction Related (PIR) day for all MCPS middle and high school faculty will transform Sentinel High School into a full day digital learning campus, exposing educators to four content strands: (1) Assessment, (2) Google Tools, (3) Universal Design for Learning Read/Write for Google, and (4) 21<sup>st</sup> Century Teaching Spaces and Project-based learning. Faculty from MTDA and Big Sky Code Academy will be joining MCPS staff by presenting some of these sessions. They anticipate over 400 staff members to participate in [this event](#). UM partners and the Washington Foundation are invited to stop by the school and sit in on some of the sessions that day.