



Year 1, Quarter 3 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.

21 Century Learning Hallmarks	SHAPE Initiatives
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

Initiative Updates



During the third quarter, the capacity for scaling International Baccalaureate training for teachers and offerings for K-12 students is well under way. The Department of Teaching and Learning at the University of Montana offered the first (C&I.534. Foundations and Principles of International Baccalaureate Programs) of the three course sequence for the [IB Teaching and Learning certificate for teachers](#). 9 students enrolled in the inaugural course, and 8 students have joined the first IB Teaching and Learning certificate cohort; they will continue in it through the 2016-2017 academic year.¹ Dr. Lucila Rudge serves as the primary advisor for teacher candidates and in-service teachers interested or enrolled in the program.

To learn from, adjust, and improve the courses offered in the IB Teaching and Learning certificate program, Dr. Rudge has been collecting data from students who participated in the first course of the program (C&I.534), and she has video conferenced with Brandon Honzel and Brad Chumrau, co-teachers of C&I.534, to evaluate the course and prepare the next, C&I.535. Teaching and Learning in International Baccalaureate Programs. Dr. Rudge has shared the syllabus for C&I.535 with Cameron Johnson, the IB Coordinator at Big Sky High School, and Jeff Kessler, the Assistant Director of the Missoula International School, both of whom are joining Dr. Rudge for 4 class sessions. Both Johnson and Kessler have affiliate status via continuing education credits for their work in the UM program. As Dr. Rudge works with teacher candidates and in-service teachers in the IB certificate program, she helps the Office of Field Experience secure placements with current IB teachers at Lewis and Clark Elementary (4 students), Big Sky High School (3 students), and Hellgate High School (1 student).²

Based on the initial feedback from students in C&I.534, Dr. Rudge and the inaugural cohort have agreed to conduct a qualitative study on their experiences in “learning to teach through the IB lens.” Dr. Rudge is currently collecting and analyzing the data; she will draft a manuscript for publication based on the research, which she will share with her students for editing, and after which she will submit for publication. The preliminary feedback from students and teachers is promising. An IB Theory of Knowledge teacher at Big Sky High School noted that his colleagues would benefit from the course as it provides a theoretical foundation for the applied workshops

¹ UM will be included in the IB Educator Certificates University Directory.

² Due to university budget constraints, the proposal for the two new strands in Master of Arts and Master of Education degrees has been placed on hold for the 2016-2017 academic year. A new proposal will be submitted in September 2017.

in which teachers have participated. Notably, one of our graduate students will write her Master's thesis on UM's IB Teaching and Learning certificate program.

MCPS has experienced great success in further developing our IB programming. The district has been strategic in increasing its capacity by providing targeted training to current and future IB teachers. During the IB summer training held at UM, 45 out of the 77 participants were MCPS teachers; this includes 100% teacher and administrator participation from our newly approved PYP candidate, Franklin Elementary School. IB professional development continues during Thursday early-outs, as staff explore the IB Learner Profile and cross-pollinate that profile with MT Behavioral Initiative components. Franklin teachers are building their Program of Inquiry and initial Units of Inquiry, while Lewis and Clark teachers vertically and horizontally align their Program of Inquiry, integrate Next Generation Science Standards into the Units of Inquiry, and prepare for the Grade 5 Exhibition. All IB teachers continue to focus on the Approaches to Learning by building inquiry into classroom learning and assessment. Professional development has expanded through additional weekly IB Professional Learning Community meetings to evaluate student's personal essays and work samples.

Such increased capacity across MCPS has resulted in an increase in Diploma students at Big Sky High School and Hellgate High School. For example, at Big Sky High School, the senior class has 11 Diploma Candidates, and roughly 23% of the senior class is taking one IB course; the junior class has 18 Diploma Candidates, and roughly 25% of the class taking at least one IB course. At Hellgate High School, the senior class has 15 Diploma Candidates, and roughly 30% of the class is taking one IB course; the junior class has 18 Diploma Candidates, and roughly 38% of the class is taking one IB course. Increased participation in the program at the high school level has occurred alongside community support for IB programming at the elementary level.

Community members, parents, students, and Lewis and Clark staff gathered for an ice cream social in September to celebrate the school's recent authorization as a PYP World School.

As MCPS looks to the future, it is strategically mapping out the next three to five years as an IB World School³ with a particular attention paid to our reauthorization visit in 2019. Dr. Elise Guest, MCPS's new Executive Director for Teaching and Learning, has begun working closely with our contacts at IBO to prepare and plan for the authorizations, including the authorization visits and timeline for the district's PYP and IB-DP programmes. As the district prepares and builds its capacity in IB, a team from Hellgate will be visiting Flathead High School to observe IB classes and speak with teacher leaders and students to ensure successful reauthorization.

³ Though it may sound strange, IBO does designate entire districts as "schools" in particular IB focus areas.



The Spanish-English dual language immersion (DLI) has expanded at Paxson Elementary School during the third quarter due to the success and popularity of the program. As of August, all of Paxson's 67 kindergartners are enrolled in the dual immersion program; further, all third- and fourth-grade students (159) now receive at least one-third of their content instruction in Spanish. Students in 3rd and 4th grade receive Social Studies and Spanish Language Arts in the target language. This "thirds" model has called for an unprecedented and robust level of collaboration between the grade level teams. Anecdotally, the teachers who were not previously part of the DLI program have expressed surprise as to how quickly the students are advancing in Spanish. The number of Paxson students enrolled in a language-intensive program grew from 176 to 306 this fall; 123 students benefit from the Spanish exposure program. By Fall 2017, over 400 students in Paxson will be a part of the immersion program, and Paxson will reach full immersion by the Fall of 2018. Spanish exposure will continue to be a part of the curriculum for those students who are not yet in the immersion program.

In August, the third annual summer intensive Spanish course ("boot camp") was offered for students new to the Spanish Immersion (SI) program and others in need of remediation. Karen Allen, a MCPS Executive Regional Director, Peter Halloran, Paxson Principal, and Dr. Elise Guest, the MCPS Executive Director of Teaching and Learning, comprised the new leadership team for this initiative during the third quarter. This team continues to employ outside-the-box thinking to meet the current learning needs of Paxson students as they keep an eye toward the future. The team has overseen the program's expansion and has worked diligently over the summer to hire the remaining bilingual teaching cadre, making sure organizational changes were in place to facilitate and support the revised dual immersion model. Two additional bilingual teachers were brought in to Paxson this year; thus, there are now seven Paxson educators teaching content-area curriculum in the target language of Spanish.

The DLI program at Paxson continues to see high levels of success in several domains. Paxson was among the highest in Language Arts scores as assessed in the statewide Smarter Balanced assessment. Paxson scored highest in the district in the domain of "listening," which could be attributed to the DLI program. In addition, the Spanish dual immersion teachers have begun to administer the IDEL and IDEL 2 assessment, which is the Spanish equivalent of the DIBELS assessment currently used across the district and in many districts across the country. Finally, in order to assess the level of learning in the target language taking place, DLI teachers began to administer the SOPA/ELOPA assessment in 2016, which provides a window into the spoken language capabilities of the students in the program. This assessment is also challenging the teachers to address identified areas of need.

The UM team working on this initiative grew this quarter. Dr. Jingjing Sun continues to support Dr. Kate Brayko with analyses of student learning. Dr. Pablo Requena, Assistant Professor of Spanish, has joined the team in a consulting role; and doctoral student, Anya McCarthy, will carry on the collaborative effort to connect UM teacher education students to field experiences in Paxson's dual immersion program and develop UM coursework that better prepares new teachers to understand and teach second-language literacy.

Because of the program model revisions at Paxson, the partnership between MCPS and Utah's Dual Immersion programs has changed, making the larger UM collaboration increasingly important. The MCPS DLI leadership team is currently looking at immersion models in middle schools around the country to prepare Washington Middle School for the first wave of Spanish speaking students in the Fall of 2018. Each fall thereafter, Paxson will be sending larger numbers of students with greater levels of Spanish proficiency to Washington Middle School. Additionally, an advocacy group amongst Paxson parents has been meeting regularly to ask how they can best serve as a resource to the district and Washington Middle School. Dr. Brayko has continued to meet with parents interested in the prospective middle school roll-out. She has also recruited partners in Montana's Office of Public Instruction to help facilitate the forthcoming social media collaborative for educators working in dual immersion and language intensive programs across the state, including those who teach in American Indian language immersion schools in Browning and at Crow Agency.

Finally, the program is seeing an unprecedented level of parental and community support. Paxson's waiting list remains lengthy, and families continue to move into the Paxson boundary specifically to enroll their children in the immersion program. Several parents who were wary of the program at its inception, have begun to see dual language education in a new light due to the positive reviews they are hearing from their own children. With a clear vision for the future of Paxson, strong leadership at Missoula County Public Schools, and the support of the University of Montana, the program is thriving like never before!



In the third quarter, the Global Competence initiative has conducted a number of informational and recruitment workshops about UM's [Global Learning Pathways](#) (GLP) program for school administrators, teachers, and high school students around the region. Early in the fall semester, staff from the GLP have been working with with members of the new leadership team in MCPS, including Julie Robitaille, an Executive Regional Director, Dr. Elise Guest, the new Executive Director of Teaching and Learning, and Nicholas Laatsch, the new Vice Principal at Hellgate High School, as well as MCPS IB staff to share information about the Global Learning Pathways program. This collaboration has not only strengthened the partnership between the programs in MCPS and the University, it has also helped GLP staff

streaming the registration process for students as well as identify overlapping areas in GLI and IB program requirements.

The GLP program offers International Baccalaureate students the opportunity to engage with the University through a series of extracurricular activities while still in high school, the opportunity to study abroad for a year between high school and college, and the opportunity to gain automatic entrance into UM's signature Global Leadership Certificate program. GLP staff presented the program to: 1) teachers at the IB summer training at the Phyllis J. Washington College of Education and Human Sciences and at IB teacher curriculum meetings, 2) to four classes of juniors in the IB program at Hellgate and Big Sky High Schools at their annual IB orientations and open houses, and 3) to parents to teachers at Hellgate and Big Sky High Schools. Future presentations to sophomore classes and 8th graders will take place in November. In addition to working with local high schools, the GLP staff has been working with Flathead High School staff to deliver the Global Learning Pathways program remotely to IB students enrolled there. This work will be ongoing through the fourth quarter and will build stronger pathways for students to participate in and benefit from the Global Learning Pathways program at UM.



Under the direction of Dr. Lisa Blank, the Science, Technology, Engineering, and Mathematics (STEM) initiative has been very active during the third quarter. A number of exciting projects are well underway. As part of the Girls STEM project, a thirteen-part video series, called "[STEM Stories](#)" was completed. The videos feature female researchers at UM at different stages in their careers, ranging from university students to emeritæ professors. Montana Hodges, an interdisciplinary doctoral student at UM, developed the initial concept based on her experience as a keynote speaker at the inaugural Girls STEM conference held on campus. Hodges completed the video series as part of her dissertation study.

From August 8th-10th, Dr. Blank facilitated a [Project Lead the Way](#) training for ten elementary school teachers from Washington, Idaho, and the Glasgow and Whitefish school districts in Montana. Notably, Dr. Blank's proposal to offer Project Lead the Way teacher candidate certificate training as part of the science methods coursework at UM was approved by the Project Lead the Way organization. The training began in Fall 2016 for 43 UM K-8 teacher candidates. All UM secondary science 5-12 students are placed at Big Sky High School in the Project Lead the Way Biomedical Sciences Academy.

As part of its commitment to a cutting edge STEM curriculum, MCPS is embedding PLTW across the curriculum. As schools continue the work in a recently completed curriculum review

and alignment of the Next Generation Science Standards, staff are in the process of designing lessons that include PLTW key components.

In addition to her work on Project Lead the Way, Dr. Blank has begun a new project in design thinking for teachers. She has collaborated with the spectrUM Discovery Center to offer a Making and Tinkering Institute, which ran from 20-21 September. Fifth grade teachers from Corvallis and Hamilton elementary school will pilot Makerspaces in their school libraries this academic year. To expand this effort, Dr. Blank has coordinated with the MCPS Flagship program coordinator to scale up the Bitterroot pilot during the 2017-2018 academic year. Related to this, Annie Graham, a doctoral student and the director of eNDVR Homeschool Learning Space, developed a [3-D printing website](#) and [spinning top curriculum](#) for teachers that is now under revision. It will be published in the Spring of 2017.

Dr. Blank has been working with faculty in Computer Science, Teaching and Learning, and Missoula College to develop a computer science teaching license at UM as well as more professional development offerings for teachers in the region's schools. A state-level proposal for the computer science license is currently in process through the Montana University System. If it is approved by the Board of Regents in the Spring of 2017, it will blow open the field of computer science for high school students in Montana, and it will position UM as a regional hub for teacher training in computer science.



The third quarter has been an especially active one for UM Arts, SPARK!, and MCPS, and it has been focused on the professional development of K-12 classroom teachers. Karen Kaufmann, UM's director of Creative Pulse, has continued her work with the program's 30 classroom teachers, librarians, and teaching artists. As part of their summer training, they have developed projects for incorporating movement into their curriculum that encourages critical and creative thinking. Participants have come not only from Missoula and western Montana, but also the West Coast and Poland. Throughout the 2016-2017 academic year, UM faculty are mentoring participants as they implement their projects.

In addition to the Creative Pulse offerings, UM Arts conducted the course, Integrating Arts in K-5 Classrooms: Art, Dance, Drama, Music, for classroom teachers from 27 June through 1 July. The multi-arts course was taught by several UM faculty including Karen Kaufmann of Dance, Lori Gray of Music, Jillian Campana of Theatre, and Steve Krutek of Art. Through hands-on learning, the course provided teachers with skills to integrate four art forms into math, science, social studies, and music, among other content areas. As part of the course, each teacher

created and presented lesson plans that highlight a student-centered, experiential, collaborative, and reflective approach to learning.

Relatedly, Julia Galloway, a UM art professor, offered Clay for the K-12 Classroom from 18-21 July. In this course, classroom teachers worked with ceramics, learning about types of clay and how each can be used for a specific end, how to fire kilns, how to develop surfaces, and how to work with or without equipment. Students worked through projects to understand clay as a medium and how three-dimensional objects might be incorporated into the classroom.

Like UM Arts, SPARK! has likewise been instrumental in providing professional development for teachers. On 11 August, a collaborative Teaching Artist orientation was jointly conducted by SPARK!, MCPS, and UM Arts to prepare artists for their teaching residencies in MCPS schools. At the end of September, Eric Johnson, of the Kennedy Center for the Arts conducted a day-long workshop entitled Great Lessons, Every Day, All Year for 22 teaching artists on the 24th. The workshop demonstrated how different forms of art can be integrated into a variety of different content area classes and lesson and linked to Common Core standards. On the 25th, Johnson conducted a smaller workshop, Taking Arts Integration to the Next Level, for a small group of experienced teaching artists. And, on 26-27 September, Stuart Stotts, of the Kennedy Center for the Arts, conducted professional development training for first and seventh grade teachers in storytelling as well as a more general sessions, entitled, Laying a Foundation for Arts Integration for 200 classroom teachers.

Finally, 900 6th grade students from MCPS and the Missoula International School experienced the dance performance, Changing Balance/Balancing Change, produced by the CoMotion Dance Project and performed at the Montana Theatre on UM's campus on 15 September.



During this quarter there have been three primary activities for the Early Interventions initiative: 1) networking activities related to dissemination, 2) networking activities related to research, and 3) the training of faculty and staff.

Dr. Atkins has continued to work with with OPI to expand the use of the pre-K screener throughout the state of Montana; he has also begun to discuss the use of the screener in California through ParentPowered, a California company has created a digital platform for educational institutions and parents of school-age children to share information and interact with initiatives in cultivating children's early numeracy and socio-behavioral skills. Daniel Zielaski, the former research fellow for SHAPE 1.0, works for ParentPowered, and has introduced the company to Dr. Atkins work. Zielaski's work on SHAPE 1.0 has likewise informed the roll-out of the ParentPowered platform.

The email modules were shared with parents via email in SHAPE 1.0 and included borrowed instructional videos for parents which added to the length and time commitment of parents. ParentPowered utilizes a text messaging platform to communicate with parents; such a platform could disseminate content similar to that which was shared via email with parents, though without videos. The two delivery systems conveying early literacy content will serve as the foundation for Dr. Atkins ongoing research on the parent learning materials and their efficacy. The cost of the development of early numeracy and social behavioral parent materials could be greatly reduced or eliminated if the effects of text messaging platform are demonstrated as effective through testing. By reducing the cost of the development of those materials, further research on the overall impact of parent engagement in early learning through digital media can be explored with greater depth.

Early this fall, MCPS began the process of conducting Parent-Teacher Home visits for incoming kindergarten families by training teachers, Native American specialists, and UM faculty and students in Counselor Education and Social Work to conduct Parent Teacher Home Visits with incoming kindergarten students. In this program, a student's teacher and a resource staff member or university intern visits the child's home to learn more about their family, interests, strengths, and what they would like to learn over the coming year. A follow-up visit occurs with each family later in the year. This model has been successfully used around the country, and it represents a significant step in how MCPS engages parents with their student's academic and social development as well as how parents and school staff communicate in meaningful ways. MCPS is also developing a parent-teacher conference model called Academic Parent Teacher Team (APTT), developed by WESTED, to assist parents and teachers in collaboratively addressing the learning growth of their students. This data-driven approach is promising; the initial training and the first parent meetings have occurred. As the model develops, parent email modules and the pre-K/early-K screener from SHAPE 1.0 and/or the text messages from SHAPE will be used to guide parent activities.



For the third quarter of 2016, the primary focus in the Universal Design for Learning (UDL) initiative was on developing and implementing the intensive two-day August 18th & 19th workshop on UDL for practitioners. Dr. Morgen Alwell, the initiative's principal investigator, advertised the workshop through the OPI Professional Development Portal and the state's regional System of Professional Development. 22 teachers from 10 schools, a speech-language therapist, and a state OPI representative attended. There were 7 teachers from Big Sky, Sentinel, and Hellgate high schools (Math, English, Business, and Health); 5 teachers from Target Range and C.S. Porter middle schools (English/Language Arts, Math, Social Studies, Health, and Special Ed); 6 teachers from Paxson, Franklin, and Chief Charlo

elementary schools (grades 1, 3, and 4); 2 preschool teachers from Great Falls and Three Forks; a Speech/Language Pathologist from Rattlesnake Elementary School, and from OPI: the state's *Positive Behavioral Interventions and Supports* (PBIS) specialist. Dr. Alwell co-developed and presented the workshop with two doctoral students and UM colleagues: Marlene Zentz and Robert Squires, and featured Andria Disney (recent Ed.D. graduate of our program), Neil Murray, M.Ed. from Chief Charlo Elementary School, and Terri Daniels, M.Ed., from Meadow Hill Middle School.

The workshop was a success! In their workshop evaluations, all participants strongly agreed that the workshop was relevant, informative, inspiring, innovative and immediately useful in their work. One high school teacher-participant wrote: "I came into this workshop hoping to be inspired and get excited about a new school year, and it truly provided that and more. I love the materials we received and I've already used them to enhance several lessons. This has been just the spark I needed! Thank you! Even the examples from different subjects and grade levels were relevant and helpful." Another participant wrote: "This was a truly valuable learning experience. Thank you!" And, a third wrote, "Well done! Thank you for all the great presentations with all the great information!"

During summer session 2016, Dr. Alwell taught C&I 518. Inclusion and Collaboration, which had 23 students, with varied expertise and school foci, including preschool, elementary, middle, and high school teachers from around the state of Montana. This fall semester, Dr. Alwell is teaching two more sections of C&I 518. Inclusion and Collaboration, including a face-face section with 20 students and an online section with 27 students. Like those in the summer section, these students represent a wide range of foci and backgrounds, ranging from pre-K to high school to multiple secondary content areas to elementary education to special education. Approximately 30% of the course content focused specifically on UDL applications, and course evaluations reflected the perceived value of studying UDL and applying this to teaching. At the conclusion of the summer course, an administrator from Libby, Montana wrote that this was the most valuable course he had taken in the past several years of coursework and professional development, and reported using many of Alwell's materials in his own work. An adjunct professor from Missoula College, who was part of the summer class, has likewise revised all his courses to reflect the tenets of UDL.

Plans are underway to offer a post-secondary focused workshop on UDL during the Summer of 2017.



During the third quarter, the Professional Learning Communities (PLC) initiative has taken on a graduate assistant, Xin Bu, to help develop the online modules. Bu has been working with the initiative's principal investigator, Dr. John Matt. Since she began in September, Bu has been learning about PLC models in general, and she has begun to look at how PLCs have been implemented in MCPS. Bu will assist Dr. Matt in developing online, adaptive training modules for teachers and administrators new to PLCs. These modules range from the very

basic, with foundational information about PLCs, to quite nuanced, with detailed information about how PLC modules are utilized in MCPS. These modules will be adaptive, initially assessing participants' knowledge and allowing them to tailor their learning for areas about which they are unfamiliar or have limited understanding. Dr. Matt is also in the process of laying out a "use case" study to examine how PLCs have been applied in MCPS. This study will help build a better understanding of the qualities that lead to success and to understand the lived experiences of PLCs.

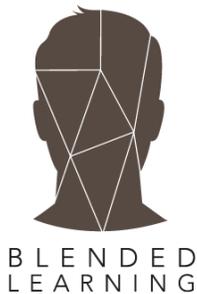
MCPS continues to strengthen PLCs across the district. To initiate the school year, 50 administrators and teacher leaders attended a "Leading and Supporting the PLC Process" professional development. The full-day session on August 22nd was presented by Jan K. Hoegh, the Associate Vice President for Marzano Research and held in the Big Sky High School cafeteria. A focus of the training was on the second question to the PLC Process: How will we know when students are learning?

To further this professional development, district administrators have committed to meeting weekly as an Administrative PLC. During this collaborative time, leaders have used the August training to implement data-driven dialogue protocols to analyze student achievement data, specifically Smarter Balanced Achievement Consortium data for Grades 3 to 8 and ACT data for Grade 11. Outcomes of these dialogues include identifying targets for teaching and learning that will directly improve student achievement outcomes for Spring 2017, when the SBAC and ACT assessments are administered.

Professional development continues as Dr. Elise Guest took 6 Principals from elementary, middle, and high schools to a 3-day PLC at Work training in Texas. This training is the foundational training to implementing PLCs with fidelity. The focus for the team was identifying essential components of PLCs that must be established to build capacity and sustainability across the district. The team will continue their learning with an active book study of *Learning*

by Doing.⁴ Learnings from this on-going training will be shared with colleagues during the weekly Administrative PLC.

Within schools, systematic coaching continues in the elementary grades PLC Coaches guide teams during a targeted 2-hour, grade-level weekly PLC meeting. In these meetings, teams deconstruct priority standards, create formative assessments and analyze student data. Success of this systematic coaching is reflected in articulated curriculum mapping documents and increased student achievement on curriculum-based measurements.



The Blended Learning Initiative, headed by Dr. Ryan Schrenk and Bob Currie of the Montana Digital Academy, has used the third quarter to prepare for the blended learning courses it will offer for teachers later this fall and next spring. Based on the course that ran this past spring, Dr. Schrenk has been revising the course to give teacher-participants an opportunity to enhance their classes through blended learning projects they create for their students. For the fall course, participants will meet face-to-face three times to become oriented to the methodology, to propose their projects, and to share their projects with one another.

To enhance student learning in blended formats, MCPS has purchased 260 student licenses for Read & Write for Google. This resource is used to allow students to accomplish learning tasks in the classroom in a self-paced manner. It also allows for students in Special Education to access their classroom accommodations to meet their individualized learning needs.

To enhance staff learning, MCPS has initiated a Google Cadre, which is made up of 87 staff members, who represent 13 of the 17 schools across all grade levels, K- 12. Participants will learn the suite of tools available in it and how classroom applications and practical tools can enhance our use of ChromeBooks. The Cadre will culminate with a Google Fest in April 2017.

⁴ Richard Dufour et al., *Learning by Doing: A Handbook for Professional Learning Communities at Work* (Bloomington, Ind: Solution Tree, 2006).