



A Technical Middle College
for Washington County, Maryland:
Concept Paper

June 2012

A Vision for a Hagerstown/Washington County
STEMM Middle College

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Overview of the Proposed School

Hagerstown Community College (HCC) and Washington County Public Schools (WCPS) are working together to design a science, technology, engineering, math and medical careers (STEMM) focused technical middle college. This program is to be located on HCC's campus for Washington County Public School juniors and seniors. This initiative is about a new innovative program and not about building new educational facilities. The term "middle college" refers to a special high school program on a community college campus offering both rigorous high school curricula along with college courses. The proposed middle college would have a technology focus and would be structured such that every admitted student would be expected to complete a post-secondary credential in a STEMM field.

The first middle college in the country was created in 1974 at LaGuardia Community College in New York City. Since then dozens of middle colleges have been developed all over the country, many varying from the original model that focused only on "at-risk" students who had high academic potential and needed a special setting to flourish academically. The only Middle College in Maryland was founded in 2011 at Prince George's Community College in partnership with Prince George's County Public Schools.

What is specifically being proposed in Washington County is a technical middle college which would greatly assist local high school students to secure a

very strong foundation in math and science as they pursue curricula in numerous **STEMM** career areas. This technical middle college would be a program creating wonderful opportunities for many high school students to complete a high school diploma while earning a college credit bearing letter of recognition (programs that have fewer than 12 credits), or college certificate (12 to 38 credit programs), or an associate's degree (60 to 70 credit programs) in a **STEMM** field by spending their junior and senior high school years, and perhaps the summer between these years as well, exclusively taking classes on the **HCC** campus.

Students in their freshman and sophomore years would be admitted into the **STEMM** program, receiving high school level curriculum, with significant math and science course work, at their home schools preparing them for the middle college experience offerings at **HCC**.

During July, between the students' freshman and sophomore years, students will be invited to attend a three-week **STEMM** summer institute where they will receive guidance and support in selecting a major area of study for their junior and senior year. This plan will focus on completing an **HCC** college credential (letter, certificate or degree) while earning a high school diploma from the **WCPS**. Also, a two week summer bridge program would occur between the students' sophomore and junior years as they prepare to be full time students on the **HCC** campus.

Consequently, the proposed middle college would be designed so that as students move to their high school junior and senior years they would spend their entire school day on the **HCC** campus and follow the college's academic semester calendars and class meeting times. All the middle college offerings, both high school and college courses, would be integrated into the **HCC** master class schedule each term. Alternative activities will be jointly designed between **HCC** and **WPCS** to account for dissimilarities in academic calendars for students participating in this program.

In designing the middle college, HCC and WCPS will be able to build upon the Upward Bound (UB) project for which a \$1.25 million grant was secured in 2012 and which will serve both WCPS and HCC students, as well as a Student Support Services (SSS) project for which HCC secured a \$1.1 million grant in 2010. UB, designed to assist 70 students beginning in ninth grade and up through the summer after high school graduation, serves students who have academic promise but are among the first generation of college-goers in their families and/or are low-income. UB will offer academic “coaching,” tutoring, career exploration, and opportunities to complete college coursework. Both academic year and summer activities are planned, with the most intensive UB activities taking place in the summer. Due to funding constraints and federal regulations, UB can serve only 70 students per year and must serve only first-generation and low-income students, unlike the middle college, and students will not have the opportunity to complete associate’s degrees or certificates through UB, meaning that the project will complement and feed students to the middle college, but not replicate it. The UB project may also serve as a useful testing ground for working out aforementioned dissimilarities in WCPS and HCC academic schedules since it will begin just before the middle college (September 2012), with the first UB Summer Academy to take place in Summer 2013. The Summer Academy for UB will offer non-credit classes for younger high school students, developmental coursework for those who need it, and college-level classes for students who are prepared and are accepted into the UB project.

HCC’s SSS project is designed to serve students with similar demographics as UB, but those who have graduated from high school and are enrolled at HCC only. SSS provides academic counseling and workshops as well as many other services, but does not provide academic coursework. Both UB and SSS have the ultimate goal of assisting socioeconomically “at risk” students who have the ability to and desire to complete postsecondary education, a goal that is supportive of, but does not replicate, middle college goals. SSS and UB are

both part of the same “family” of U.S. Department of Education programs known as the “TRIO” programs that were started as part of the War on Poverty in 1965. TRIO programs, by definition, offer one-on-one consistent and intense support for students, focus on early intervention, and are community-based in that individual projects determine local activities. Research completed over more than forty years indicates that the programs are successful in increasing completion rates of the students they serve.

In effect, both UB and SSS will provide ancillary services designed to lead to particularly exemplary retention and completion rates for those middle college students who are eligible, apply, and are accepted into the projects. Some middle college students will not be eligible for UB or SSS due to federal regulations and funding constraints, so the set of students attending the middle college and those involved in UB and/or SSS will intersect in beneficial ways that will help ensure the middle college’s success, but not be the same. The model would have many similarities with one of the first technical middle colleges in the United States which was established in 1997 at Washtenaw Community College in Ann Arbor, Michigan. HCC’s current president, Dr. Guy Altieri, played a leadership role in the design and implementation of that particular school which has, since it’s founding, won numerous awards for its pioneering approach to STEMM education. This particular school, the Washtenaw Technical Middle College (WTMC), has had most of its associate degree recipients go on to earn engineering and other STEMM bachelor and graduate degrees at many prestigious universities. The WTMC has in the past 15 years mastered the high school to college curriculum alignment and accelerated the learning challenge that has in recent years become a targeted “best practice” for communities all across the United States. Although the broad vision, mission and general structural design for the HWCSMC (Hagerstown/ Washington County STEMM Middle College), as well as the major benefits it will bring to the community and to WCPS students have been discussed, many of the details have yet to be finalized.

Why do WCPS and HCC want to start a STEMM middle college? What are the benefits to students, to WCPS and HCC, and to the community as a whole?

HSMC's benefits to students are clear: students would complete high school with not just a high school diploma, but also with a college STEMM letter of recognition, certificate or associate's degree in a STEMM field. In effect, they'll earn transferable college credit or career-entry preparation at a very low cost. When students attend public four-year institutions and pay in-state tuition rates, the average expenditures they or their parents will make for tuition, fees, room, and board in 2011-2012 averaged \$17,131, according to the College Board--meaning that two years at HWCSMC could save each family over \$30,000, on average, if their children plan to eventually earn bachelor's degrees. If students intend to earn associate's degrees and immediately enter the workforce, they and their families will save both money and time when it comes to achieving that goal. Over time, a college degree, on average, means more earning power and less likelihood of unemployment for every student. The average regional unemployment rate for those who had associate's degrees in 2010 was 5%, compared to 11% of those who had not obtained any college degree.

WCPS and HCC value their growing collaboration and share many common goals including but not limited to: student success, completion of programs of study, advanced academic programming for students who are ready and interested in such course work, the importance of student attainment of educational goals beyond high school, student leadership training (the Kepler Scholars program) and eventual student employment in a high demand career field.

For WCPS, the middle college offers a lower-cost opportunity for students to complete lab-based STEMM courses for which HCC has new and well-

equipped requisite facilities and content faculty with doctoral degrees and many years of related work experience. This partnership school will also help ensure that promising students graduate from high school and complete a college program suitable to their career interest and abilities.

For HCC and the larger community, the middle college would ensure that students are academically ready to complete college programs and STEM curricula attract even more students, helping prepare Washington County for the jobs of the future, which are projected to be increasingly more math and science based. For the community, more well-educated college graduates means a more qualified work force, which is a primary factor private companies consider when locating their businesses.

What would be the student profile of those who would be served by this proposed middle college?

It is expected that the students who would be selected to attend the middle college will come from all of the WCPS high schools and will need to make application with support from their parents, high school counselors and principals. The students will be expected to have completed algebra and a course in physical science or life science before their freshman and sophomore years to be eligible to apply. Program admission interviews will be conducted jointly by both WCPS and HCC personnel. A parent or guardian is expected to accompany the student to the interview and to be fully informed and integrated into the admission process, including signing-off on a commitment to support their child's focus on being successful. Student motivation, interest, maturity and potential will carry as much weight in the admission decisions as the student's course grades. As is the case at many successful middle colleges, students need to be very focused on their education and the unique opportunities a middle college education can provide in order to blossom within a demanding, yet supportive, academic environment on the HCC

campus. In a very student-centered environment students will engage in rigorous academics and must be ready to learn and apply valuable life-management skills to be successful in a unique learning environment. This type of middle college model is best for students who can do well with the accelerated academic and personal growth that is facilitated with personalized advising and guidance into a suitable STEMM career track.

To what extent have middle colleges been developed and succeeded in Maryland and across the United States?

As noted above, in 2011 Prince George's Community College opened its Academy of Health Sciences, a middle college with great success. In addition, Baltimore County Community College is studying the idea of a middle college in cooperation with Baltimore County Public Schools. A network of dozens of schools nationwide, the Middle College National Consortium, was established in 1993, and successful middle college high schools have been established in most states across the country. Most of these have a different emphasis than HWCSMC, which will be a math and science focused technical middle college designed to meet the needs of students who want to attend college and evidence strong motivation to pursue, and ability to achieve, rigorous postsecondary academic goals. Almost all middle colleges that have been initiated in the last 15 years have had significant success and continue to do extremely well. Each middle college is shaped to meet local needs. The structures, financial models, and curriculum vary greatly, but all middle colleges benefit in joint programming between a local community college and the area public schools.

To what degree is the HWCSMC's model developed at this time? What still needs to be decided?

The planning process for HWCSMC is still in its beginning stages, and both HCC and WCPS will seek grant support for planning activities as well as designate current existing resources to complete the detailed work needed to finalize the design and implementation plans for the new school. As is the case with most effective program development processes, broad strokes, creative ideas, and sound decisions about the “why and for what purpose” of a project come first, then the operational details follow. Progress has already been made to consider lessons learned at other middle colleges, especially those with a math and science focus. Although the overall vision, location, and emphasis for HWCSMC have been determined, many details, as represented in the following questions would still need to be addressed:

1. How large would the student population be at both start-up and longer term?
2. Should the HWCSMC be established as a charter school or a non-charter joint program?
3. What would be the HWCSMC funding model and how will annual budgets be constructed and approved?
4. How would the HWCSMC be structured to assure it will be sustainable?
5. What precise criteria and what process would be used in admitting students to the HWCSMC?
6. How would students be selected, if demand exceeds available capacity, which is very likely to occur?
7. How many faculty and staff would be needed to start the HWCSMC?
8. What courses and credits will be offered at HWCSMC?
9. What would be the transportation arrangement to get students to and from the HWCSMC each day?
10. Will HWCSMC students be permitted to attend extracurricular activities at WCPS schools as well as at HCC?
11. What model of access would be applied for HWCSMC students to become members of HCC student groups and clubs?

12. How would scheduling conflicts be managed, which are created by institutional differences and parental expectations, given the age of program participants?
13. How would the summer institute be structured and funded?
14. How would any inappropriate student behavior be addressed by WCPS and HCC student services personnel?
15. How would attendance and other required student records be maintained?
16. How would student academic records, such as projected PARCC or high school competency exams, be administered and aggregated?
17. What is the timeline for admitting students and opening HWCTMC?
18. What would be the model for addressing middle college data collection and reports?
19. What would be the legal status and governance structure for the school?
20. How would the students be registered and tracked, both during the middle college years and after they graduate?
21. How would HCC's on-line course management software and actual on-line courses be provided for the middle college students?
22. What would be the size and location of the middle college office space on the HCC campus?

Summary of the Intended Outcomes of the Proposed School

The Hagerstown/Washington County STEMM Middle College will provide excellent educational opportunities well beyond what is normally possible in the traditional high school. This proposed innovative model will provide an exceptional opportunity for local students to take both high school and college courses and to concurrently earn a high school diploma as well as a STEMM college credential (letter, certificate, or degree) and university transferable college credits. The program would be designed to teach academic, critical thinking, and life management skills in an atmosphere that would be very student-centered and provide individual guidance to achieve well-educated, adaptable, self-directed, and responsible STEMM graduates.