PART A – GENERAL INFORMATION

Objective: Provide pertinent identifying project information.

A.1 Institution Name & Primary Address

Holyoke Community College
303 Homestead Ave.
Holyoke, MA 01040

A.2 Contact Information

Name: William Fogarty
Telephone: (413) 552-2220
Email: bfogarty@hcc.edu

A.3 Project Name and Location
(if different from institution primary address)

Center for Life Sciences

A.4 Total Project Cost (TPC)

$ 40,716,680

A.5 Amount ($) Requested from DCAMM:

$ 6,684,220

A.6 Existing Building(s) Impacted
If applicable, list the names of the buildings being impacted by the project

Marieb Building

A.7 Project Type (select all that apply)

- [x] Renovation
- [ ] Replacement
- [ ] New /2yãúNdzÖûl2y
- [ ] Demolition

PART B – EXECUTIVE SUMMARY

Objective: Provide a one-page succinct summary of the project, including project goals and impacts.

B.1 Executive Summary (maximum 5,000 characters (approximately 770 words))
Provide a narrative summary to describe the project and the project's impact on student success and its value proposition to the institution, to the broader community and to the Commonwealth of Massachusetts. Include:

- A brief (1-3 sentence) description of the project
- short- and long-term project objectives in alignment with the Commonwealth Priorities
- a description of the specific need for this project – including limitations of any existing spaces, leasing or funding arrangements.

(This is a summary narrative; more specific and detailed information will be requested in the following sections).

Holyoke Community College (HCC) seeks to expand its capacity to provide education and training in support of the growing life and health sciences industries in its service region by creating a new Center for Life Sciences through renovation of the College's Marieb Building. The new Center will provide state of the art facilities to help launch student careers in the fields of biotechnology, environmental science, sustainability studies, animal science and forensic science. It will also provide foundational instruction in the fields of biology, zoology, botany, anatomy and physiology in preparation for further study in various health and life sciences fields, including nursing and radiology at the HCC Center for Health Education.

The Marieb Building currently houses many of these programs. Other than a section of the first floor, the building has not seen significant renovation since its construction in 1972. Laboratories and other instructional spaces are seriously outdated and space is not configured to meet current academic standards. In the face of growing employer demand for employees with training in the various life sciences disciplines, the College is attempting to fill that need in grossly outdated facilities that in many cases are inferior to those provided at local high schools. The building also suffers from water infiltration and disability access issues.

Through a grant from the Massachusetts Life Sciences Center and the College's own capital fundraising campaign, DCAMM completed Phase 1 of the Center for Life Sciences in 2018 by constructing a microbiology laboratory, biotechnology laboratory and the region's first clean room training facility on the first floor. That project was designed with advice from regional biotechnology industry leaders.

The College is seeking approximately $10 million from the Elaine Marieb Foundation for completion of the second floor, including environmental science, animal science, and anatomy & physiology.

Major Capital funding from the Commonwealth would allow the College to complete the Center. It should be noted that given the scope of the project and the need to maintain life sciences instruction during construction, the project has been planned in five phases. If approved, Commonwealth support could be spread out over a number of years. Completion of all five phases is necessary to achieve the College's vision for creation of a Center for Life Sciences. However, from an operational standpoint, each phase is fully functional once completed and is not dependent on completion of subsequent phases. Project phasing is summarized below:

Phase 1, first floor partial, Biotechnology, Microbiology, Clean Room Training, $4,550,000 (completed in 2018 and not included in Total Project Cost estimate).
Phase 2, first floor partial, Sustainability Studies, Veterinary Technology, Forensic Science, $6,684,220.
Phase 3, second floor total, Environmental Science, Veterinary Technology, Anatomy & Physiology, $11,749,204.
Phase 4, third floor total plus expansion, General Biology, Zoology, Botany, Greenhouse, $17,114,119.
Phase 5, new entranceway, vestibule, common spaces, all three floors, $5,169,137.

Funding for this project will meet Commonwealth priorities by:
(1) Addressing extensive deferred maintenance in an existing building and maximizing use of its space. Sightlines evaluation shows the Marieb Building as having a net asset value of 50%. The current CAMIS value for the building is $21 million.
(2) Support transfer of students pursuing education beyond the Associate's level in the Life Sciences while supporting career readiness in expanding life sciences fields.
(3) Address regional shortages of trained personnel in the life science and health science fields.
(4) Supporting flexible and innovative programming in the life sciences disciplines.

PART C – PROJECT SCOPE

Objective: Provide specific project information regarding the proposed project size, space type and program.

C.1 Summary Project Gross Square Foot (GSF) information

	TOTAL GSF* Total work area	GSF of Programmatic Renovation**	Additional Comments (Ex.: How GSF breaks out for different buildings, brief description…etc.)
Renovation GSF	53,257 GSF	53,257 GSF	Includes 7,582 GSF completed under Phase 1.
New Construction GSF	9,300 GSF	9,300 GSF	
Demolition GSF	GSF	GSF	

* ***Total GSF:*** *the total gross area of the building impacted, including areas where only infrastructure or envelope work is being conducted, and where no programmatic changes will occur.*

** ***GSF of Programmatic Renovation****: the total gross area of the project resulting in programmatic change and or modernization.*

C.2 Summary Space Allocation

Indicate space types and program assignable square footage (ASF)* within the areas of programmatic change (what is there now, what will be there after completion of the project).
Please note that information should align with Part E – Project Program Impact.

			EXISTING Allocation of Project Space			PROPOSED Allocation of Project Space		
Space Type		Description	# rooms or spaces	# seats	ASF*	# rooms or spaces	# seats	ASF[3]
Examples	Offices	Chemistry Faculty	35	35	4,200	2	24	2,400
	Laboratories	Chemistry(2)/Biology(2)	4	96	5,600	5	120	7,000
	Storage	Chemical Storage	1	0	400	2	0	800
Classrooms			11	410	7,583	10	320	7,085
Laboratories		Includes Clean Room (completed)	13	328	16,481	21	360	20,702
Offices		Faculty & Administrative	50		5,393	27		2,572
Lab Support/Storage			4		4,840	21		6,589
Circulation					14,309			18,489
Building Support					3,808			4,000
Greenhouse		Location being moved. Current location difficult to access for maintenance & repairs.	2		843	1		696
Seminar & Meeting			0		0	6		2,011
Open Computer Room			0		0	1		413
TOTALS (calculated field)			80	738	53257	87	680	62557

* ***ASF = Assignable Square Footage*** *- The sum of areas assigned to, or available for assignment to, an occupant or specific use.*

PART D – BUILDING CONDITION IMPACT

Objective: Identify Critical Repairs being addressed by the proposed project.

Note: *Identified critical repairs projects may also be requested through the separate critical repairs (deferred maintenance) funding process. Should the major project be funded, the critical repairs being addressed will be funded through the allocation for the major project, and DCAMM will prioritize another project for critical repair funding based on the priority level and categorization for all projects in CAMIS.*

D.1 Critical Repairs - CAMIS

For the facility(ies) impacted by this project proposal, run and download information from the CAMIS Report entitled "Major Project Capital Request – Deferred Maintenance".

For each building, summarize in the below table TOTAL $ Need and TOTAL $ Addressed by the proposed projects for the specified timeframes. $ should reflect only those projects identified as DCAMM Project Type "DM – Deferred Maintenance" or "DM – ADA".

Building Name	Project Type	Timeframe	TOTAL $ Need Identified	TOTAL $ Addressed by Proposed Project
	DM	A		
	DM-ADA*	A		
	DM	B		
	DM	C		
	DM	A		
	DM-ADA*	A		
	DM	B		
	DM	C		
	DM	A		
	DM-ADA*	A		
	DM	B		
	DM	C		
TOTAL (Calculated Field)			$ 0	$ 0

* *DM-ADA Projects in CAMIS are all Timeframe A*

D.2 Critical Repairs – Other (Maximum 1,650 characters (approximately 250 words))
Please note below any additional building condition issues that will be addressed by the proposed project.

D.3 Commonwealth Requirements (maximum 3,300 characters (approximately 500 words))
Describe below how the project will address the following Commonwealth Requirements:

- ADA minimum compliance requirements (parking, entry, toilet rooms, circulation, signage…etc.)
- ADA program access for people with disabilities (specifically for theaters and lecture halls)
- Energy efficiency
- Sustainability
- Climate Resilience

The project will address the following items identified in the College's ADA Strategic Compliance Assessment: install graphic and tactile maps and signage; upgrade one restroom for each gender; install compliant door hardware; install at least one accessible drinking fountain; and install detectable warnings at protruding items.

The projects will address the following items identified in the HCC Center for Life Sciences Study to address energy efficiency and sustainability: replace air handling units; new DDC temperature controls; new VAV boxes; new electrical distribution panels; and new LED lighting.

PART E – PROJECT PROGRAM IMPACT

Objective: Describe the impact of the programmatic changes on student capacity, student success, space-use and state-wide needs.

E.1 Summary Programmatic Change (maximum 3,300 characters (approximately 500 words))
Describe below the programmatic impact of the project on student seats / capacity in classroom, laboratory and studio spaces.

The initial planning design for the HCC Center for Life Sciences strives to give a common identity to the life sciences programs and promote collaboration and mutual support among faculty and students. For the first time, the Marieb Building with have an identified main entrance with common space to highlight student work and promote study in the life sciences. Attractive common areas are provided to encourage group activities.

Research shows that persistence and achievement is enhanced when students feel a sense of "belonging" to a community within the larger institution. Creating a Center for Life Sciences will allow HCC to build such a community for the academic disciplines that will reside in the renovated Marieb Building. Bringing these disciplines together and providing spaces for student collaboration will enhance the educational experience.

Creation of the Center will also support the College's "Advising Re-imagined" effort to provide strong linkages between advising services and the academic programs. The pilot of the program under Foundations of Health has demonstrated a 10% improvement over the College-wide average in student retention. The Center for Life Sciences will create the physical space and focus to bring this effort to the next level, allowing a visible, easily identifiable location for embedded advisors.

E.2 Space Use (maximum3300 characters (approximately 500 words))

Respond to the following questions as they apply:

- How is the building or project space currently being used?
- Is the space suitable for its current use? If not, why not?
- How will renewal of this space (or new space) maximize utilization of the space?
- How will the new space use improve student equity, access and success?

Where possible, include space utilization quantitative data specific to the project building(s) (including source of information), as it applies to the program.

DCAMM Space Guidelines for Academic Space Allocation (NASF):
Please note these are guidelines only; they represent a starting point, not a definitive requirement.

CLASSROOMS	Utilization:	67% of scheduling window (typically +/- 40 hrs.)
	Occupancy:	67% of available seats, overall average of classes
LABORATORIES	Utilization:	50% of scheduling window (including set up & breakdown)
	Occupancy:	80% of available seats; overall average of classes

The academic disciplines that will benefit from the proposed renovations include some of the most heavily enrolled laboratory sciences offered at the College. They support the large and growing Foundations of Health major along with several life science disciplines.

Current facilities are antiquated and rooms are laid out in a manner that makes and inefficient use of available space. The proposed renovation will "right size" classroom and specialized instructional spaces, provide needed support and storage space and configure spaces to meet modern academic standards.

Current room utilization n the Marieb building is 77% for classrooms and 81% for laboratories. By updating facilities, right-sizing rooms and improving layout, we believe we can increase utilization.

E.3 Programs Impacted (maximum of 10 programs)

Identify the instructional and training program(s) (maximum 10 programs) most significantly impacted by this project, their associated target occupation(s), current program capacity and projected program capacity (following completion of the project. Please include Classification of Instructional Programs (CIP*) code (4 digit) for each program and the primary Standard Occupational Classification (SOC**) code(s) for each targeted occupation(s).

Program Name(s)	CIP* (4 digit) (##.##)	Associated Occupations (SOC**) (If Applicable) (##-####) (Max. 6 codes)	Enrollment	Program Capacity (# of FTE spaces available/ 12 months)	
			Fall 2018	2018-2019	Projected
Sustainability Studies	30.33	11-9013 17-3025 19-4092	22		
Clean Energy	19.07	49-9021	1		
Environmental Sciences	03.01	19-2040	45		
Foundations of Health	51.00	31-0000	761		
Direct Care Worker	51.26	39-9021	8		
Community Health Worker	51.22	21-1094	40		
Biotechnology Transfer	26.12	19-4021	10		
Veterinary Technician	51.08	29-2056	45		
Biology	26.01	25-1042	170		
Forensic Science	43.01	19-4092	30		

* ***CIP*** *- provides a taxonomic scheme that supports the accurate tracking and reporting of fields of study and program completions activity. Please go to the following link to help determine CIP codes https://nces.ed.gov/ipeds/cipcode/Default.aspx?y=55.*

** ***SOC*** *- Information can be found at http://www.onetonline.org/crosswalk/*

E.4 State and Regional Labor Market Information (maximum 4000 characters (approximately 600 words))
Describe the extent to which the program aligns to and/or addresses training and employment gaps as defined by the Regional Workforce Skills Planning Initiative Regional Blueprints. For information see: https://www.mass.gov/service-details/view-your-regions-blueprint. Describe alignment to priority industry sectors and high demand occupations.

- Identify workforce / economic development needs specifically addressed by this project.
- Identify the source(s) of information that document the ability of programs impacted by the proposed project to close skill gaps in high need occupations.

The Economic Development Council of Western Massachusetts (EDC) reports on its website, www.westernmassedc.com/industryclusters/lifesciences/, that "Massachusetts is the home of the world-renown 'Super Cluster' in the Biotechnology Industry, focused in Cambridge. It is spreading west beyond the Greater Boston-Cambridge area as it expands. In Western Massachusetts, proximity and connections to the Super Cluster are regional strengths. The twin giants of the industry in this region are research institutions Baystate Health, of Springfield, and the flagship campus of the University of Massachusetts at Amherst." The latter two institutions formed the Pioneer Valley Life Sciences Institute in 2002.

The EDC goes on to report on research activities in the Western Massachusetts and highlights several life sciences companies, including firms who have sent representatives to advise HCC on our program offerings. Industry leaders report ongoing challenges with attracting entry-level employees with sufficient base knowledge to launch careers in the life sciences fields. The June 2014 "Knowledge Corridor Talent and Workforce Strategy" prepared by the University of Massachusetts Donahue Institute reports 219 average annual opening and 78 annual average growth for positions in the Life, Physical and Social Sciences occupations in the region.

In addition to preparing students for further education and careers in the life sciences industries, courses offered in the Center for Life Sciences lay the foundation for further study and careers in health services. According to the 2016 Massachusetts Workforce and Labor Area Review by the Massachusetts Executive Office of Labor and Workforce Development, health care and social assistance positions make up 26.2% of private sector jobs in the Hampden County Workforce Development Area, far exceeding 18.2% for the Commonwealth as a whole. The same study projects annual openings in these fields as follows:

* Registered Nurses, 264
* Medical & Health Services Managers, 49
* Nursing Assistants, 105
* Licensed Practical & Licensed Vocational Nurses, 41
* Medical Assistants, 76
* Mental Health & Substance Abuse Social Workers, 48

Completion of the HCC Center for Life Sciences will greatly enhance the College's ability to prepare students for entry-level positions in Western Massachusetts and across the Commonwealth. Also, at a much-reduced cost to students, HCC will lay the foundation for advanced study.

E.5 Student Opportunity, Equity & Success (maximum 3300 char. (approx. 500 words))

Describe how the proposed capital project:

- impacts student access, equity and success.
- addresses the campus strategic goals.
- addresses the MA Public Higher Education System strategic priorities.

The project will impact student access, equity and success by creating state-of-the-art instructional facilities and provide space that invites collaboration. By incorporating the principles of universal design, as called for by the College's strategic plan, the project will improve access to the life science fields for all students.

In its Strategic Plan, HCC "aspires to be a college of academic excellence known for helping students overcome barriers to success." The Center for Life Sciences will create home base life science students, creating identity and community which are proven elements supporting student success. These elements will be important in implementing support services that address the "whole student" as called for in the College's Strategic Plan.

The four Commonwealth priorities are addressed by this project as well. This is existing space that is badly in need of updating. The proposed design will maximize its use and functionality. Updated life sciences facilities will expand the College's options for collaboration with our partner academic institutions as well as employers in the Pioneer Valley. We are already seeing this with the completed Phase 1 of the project. The project will also support the College's efforts to fill the gap of qualified employees in life sciences fields, and identified need in the Pioneer Vally. Finally, the space will be designed in collaboration with faculty to ensure flexibility in program delivery models and a learning environment that will improve student access and outcomes.

E.6 Efficiencies in Program Delivery (Maximum 3300 characters (approximately 500 words))
Describe any efforts to maximize use of flexible or innovative program delivery models that enhance student and program impact. Examples include:

- collaboration/partnership with organization and/or institution (shared space, shared instruction, etc.)
- alternative teaching methods (e.g. Flipped classroom, makerspace, project based, etc.)
- alternative delivery methods (online learning, hybrid program delivery, etc.)

If the proposal does not address alternative program delivery models, explain why and whether alternatives were considered.

The study design incorporates a number of shared seminar, classroom and study spaces to provide flexibility in the use of space and program collaboration. Updated technology provided by this project will facilitate continued development of online and hybrid programs.

Some of the spaces will be designated as active learning classrooms. This will allow a more modular classroom and give the instructor freedom to incorporate dynamic instructional strategies. In addition, the usage of in-classroom recording through Panapto® and Camtasia® will allow students to reference multiple video feeds during and after class.

PART F – COLLABORATIONS & PARTNERSHIPS

Objective: Describe collaborations and partnerships that are contributing to and/or being strengthened by the proposed capital project. Partnerships / collaborations can be between and among other academic institutions and/or with outside public/private partners.

F.1 Impact on collaborations and partnerships (Maximum 3300 characters (approximately 500 words))
Identify collaborations and partnerships that relate directly to the proposed project and that are both contributing to, and being strengthened by, the proposed capital project. Include:

- Facility or space sharing agreements or collaborations and describe how these collaborations and partnerships impact the proposed project in terms of program access, project size, and space utilization and efficiency.
- Programmatic collaborations that directly impact program delivery and describe how each partnership/collaboration impacts enrollment, student equity, access, and success.

The College has collaborated with the Massachusetts Life Sciences Center, which funded most of Phase 1 of the renovation project and the Elayne Marieb Foundation, which funded the building planning study and is considering funding Phase 3 of the project. Partners on the College's Industry Advisory Board include Accuratuslabs, FloDesign Sonics and Cirtec. The College has articulation agreements for various life sciences programs with the University of Massachusetts/Amherst, Westfield State University, the State University of New York/Canton, Bay Path University, the Massachusetts College of Liberal Arts, Worcester State University and Elms College.

PART G - PROJECT IMPLEMENTATION & SCHEDULE

Objective: Describe project phasing required and estimated schedule

G.1 Anticipated occupancy (and use) date (assume a July 15, 2020 project start date)

January 2022

G.2 Swing space (maximum 3300 char. (approx. 500 words))
Describe how the implementation plan will address swing space/program needs during construction

The project is broken down into phases, minimizing the need for swing space. Whenever possible the College will explore expansion of online options to reduce expenditures for temporary facilities.

G.3 Estimated Project Schedule

Indicate a preliminary project schedule assuming funding in FY21 below. Include all enabling projects, designer selection (if applicable), design, bidding and construction.

Project Tasks	Estimated Time (Months)	Remarks
DSB Ad / Designer Selection (If through DCAMM – 3 months)	3	
Study & Schematic Design	2	
Design	3	
Bidding (If through DCAMM – 3 months)	3	
Construction (including enabling & backfill projects)	4	Occupancy date provides cushion for schedule slippage.

G.4 Construction - Project Components

If applicable, identify below major project components required for project completion. List:

- Enabling projects (including program relocation/swing space);
- The proposed major capital project (including all phases of design through construction);
- Backfill projects required for full completion of the project.

Project Components	ASF of swing space required (if applicable)	Estimated Total Construction Cost of Phase (ECC)	Time to complete construction (months)

PART H – PROJECT BUDGET & BUSINESS CASE

Objective: Describe the funding for the capital project and consider the impact of the proposed capital project on operating and maintenance budgets and understand the financial assumptions regarding the impact of the proposed capital project on enrollment, retention and institutional budget.

H.1 Total Estimated Project Cost

Indicate ECC and TPC for project

Project Cost	Amount ($)	Remarks
Total Estimated Construction Cost (ECC*)	$ 29,083,343	$4,744,443 requested for Phase 2.
TOTAL PROJECT COST (TPC) (DCAMM projects use TPC = 1.45 x ECC)**	$ 40,716,680	$6,684,220 requested for Phase 2.

** ECC to include escalation contingency to mid-point of construction assuming July 2021 start date*
*** The TPC includes planning and design fees, cost of furnishings and equipment, cost of any additional consultants required (access, environmental, envelope, commissioning, etc.), contingencies, and various management costs. A 40% markup is the standard markup used by DCAMM at this stage of a project.*

H.2 Total funding:

Identify the $ amount being requested from DCAMM and indicate what other sources of funding are being used for this project. Under "Timing and Constraints" describe whether these are matching funds, grants, loans or gifts and clarify timing and other constraints on the funding $.

Confirm timing constraints of financial commitment. Please note: all $ (including fundraising $ that have not yet been committed) must be committed and confirmed prior to completion of Study/Schematic Design Certification.

If the IHE is providing funding to support completion of the project, indicate amount and timing of confirming the availability of cash resources of institution. If the IHE has secured private sector funding to support completion of the project, indicate the name of the provider (s) amount and timing of the availability of cash resources of institution. Provide a letter from the Trustees confirming a commitment to providing IHE's resources and indicating the availability of funding timing.

Funding Source	Amount ($)	Timing & Constraints
DCAMM	$ 30,716,680	See Ph. 2
Elaine Marieb Found.	$ 10,000,000	
TOTAL FUNDS (calculated field)	$ 40,716,680	**Total funds must equal the TPC in H.1**

H.3 Potential revenue from sale of state-owned property

If the project involves the potential sale of state-owned property, include the name of the building or asset that will be sold, and the estimated total amount of revenue that would be deposited to the Commonwealth's General Fund as a result of the sale, pursuant to current state law. While the revenue would not be used directly to fund the project, it could be considered as an offset to the overall cost to the Commonwealth.

Property/Building Name	Amount of Potential Revenue ($)	Timing & Constraints

H.4 Business Model (maximum 2300 characters (approximately 350 words))

Describe the business model and its impact on the College's overall financial position, including any changes to the College's expendable net assets.

During a period of enrollment challenges, the project enhances the ability to expand enrollment in our highest demand areas and connect graduates to growing employment opportunities in our service region. Completion of Phase 1 has already enhanced collaborations with industry partners and given our students access to potential jobs. The College needs to expand enrollment among traditional and older students, and creation of a state-of-the-art hub for the Life Sciences will be essential for enrollment expansion in that area.

The College has already benefited from lower operating costs due to upgrades in equipment and systems elsewhere on campus. Much of the building still relies and systems installed in the 1970's. They require constant attention to maintain operations and are highly energy inefficient. Updates will reduce maintenance expenditures and lower utility costs.

H.5 Operational Budget Impact

Provide a financial plan for operations of the renovated/new facility that describes ongoing operational impacts of this project following completion; include any funding mechanism that may be a supplemental source of annual revenues. Where $ not available, indicate projected % change in the comment field.

	Current Annual $	Projected Annual $ (at project completion)	Narrative Comments on anticipated change
Revenue			
Enrollment	$ 3,300,000	$ 3,630,000	
State Funding	$ 2,600,000	$ 2,744,940	
Other	$ 93,000	$ 120,000	Workforce Development
Total Revenue (calculated field)	$ 5,993,000	$ 6,494,940	
Costs			
Facility Operational Costs			
Utilities	$ 534,737	$ 544,200	Increase moderated by greater energy efficiency.
Maintenance	$ 399,381	$ 360,000	Anticipate lower cost by addressing deferred maintenance.
Security	$ 161,815	$ 168,300	
Other			
Institutional Operating Budget			
Staff / salary costs	$ 2,695,351	$ 2,803,000	
Equipment costs	$ 20,000	$ 40,000	
Lease payments			
Other			
Total Costs (calculated field)	$ 3,811,284	$ 3,915,500	
TOTAL INCOME / (LOSS) (calculated field)	$ 2,181,716	$ 2,579,440	

H.6 Financial Impact (maximum 2300 characters (approximately 350 words))

Describe how the proposed project business model will impact operating efficiency.
Where applicable, indicate briefly how the proposed project will substantially impact operations and efficiencies. Highlight the connection between the proposed capital project and anticipated changes in revenue or costs through increased enrollment, increased retention, expanded program expenses, increased maintenance costs, change in lease payments or other operating budget impacts.

With the exception of facilities renovated in Phase 1 of this project, the College is offering life sciences programs in outdated facilities. Laboratories are configured in a manner that does not reflect current approaches to teaching. Instructors are delivering content in spite of current lab facilities and layouts. In many cases instructors must "teach around" current fixtures in labs. Students are coming from high schools with superior facilities.

The complete Phase 1 of this project offers a stark contrast. Laboratories and classrooms are "right-sized" and have sufficient support space. Space is utilized more effectively. The new layouts offer flexible and attractive learning environments that promotes group work and collaborative learning. Industry representatives were engaged in facility design and continue to have connections to credit and non-credit programs.