

# Characteristics of Ideal Spaces for 21<sup>st</sup> Century Learning Communities

## Instructions:

This *Characteristics of Ideal Spaces for 21<sup>st</sup> Century Learning Communities* survey has evolved from the experiences of the many colleges and universities that have participated in Facilities Planning Workshops since 1992 (formerly PKAL, now LSC).

For each of the characteristics described below, rate the current circumstance of your facility. This can be done individually and/or collectively. After completing the survey, identify the areas for celebration as well as those that perhaps need attention. Reassess your facility periodically.

<b>With respect to serving the INSTITUTIONAL MISSION, what works is when:</b>		
	Is this important to us?	Do we have this?
♦ spaces provide a venue for the campus community to connect with each other as they connect to and explore the world around them.	-2 -1 0 1 2	1 2 3 4 5
♦ the design and siting of the facility signals that science is a core discipline in 21 <sup>st</sup> century liberal arts education, encouraging and expanding the community of science on that campus.	-2 -1 0 1 2	1 2 3 4 5
♦ spaces promote public interest in science and technology by making science “visible” and by drawing people together to discuss the relationships between science, technology and society.	-2 -1 0 1 2	1 2 3 4 5
♦ spaces foster the seamless integration of research and education.	-2 -1 0 1 2	1 2 3 4 5

<b>With respect to serving the INTELLECTUAL AND SOCIAL NEEDS OF STUDENTS, what works is when:</b>		
	Is this important to us?	Do we have this?
♦ all students (majors and non-majors) feel welcome and comfortable in the spaces.	-2 -1 0 1 2	1 2 3 4 5
♦ spaces are responsive to new insights from cognitive science about how people learn.	-2 -1 0 1 2	1 2 3 4 5
♦ spaces nurture both collaborative and individual work, in formal and informal settings.	-2 -1 0 1 2	1 2 3 4 5
♦ spaces promote the productive synergy of researchers, graduate students and undergraduate students, through thoughtful proximity of spaces for learning, teaching and research.	-2 -1 0 1 2	1 2 3 4 5
♦ spaces inspire an active imagination and allow students to exercise their imagination.	-2 -1 0 1 2	1 2 3 4 5

## Characteristics of ideal Spaces for STEM Learning Communities

<b>With respect to serving the NEEDS OF CONTEMPORARY SCIENCE, <i>what works</i> is when:</b>		
	Is this important to us?	Do we have this?
♦ the dissolving of boundaries between the disciplines is evident and encouraged, with the capacity to adapt and reconfigure as new projects and programs evolve.	-2 -1 0 1 2	1 2 3 4 5
♦ there are matrices of public and private spaces for learning, teaching, research, formal and informal learning, and serendipitous encounters.	-2 -1 0 1 2	1 2 3 4 5
♦ the “doing of science” is visible, with windows into the laboratories, display shelves with scientific artifacts, and art throughout.	-2 -1 0 1 2	1 2 3 4 5
♦ space is provided for uninterrupted work on research projects by students and faculty.	-2 -1 0 1 2	1 2 3 4 5
♦ they easily accommodate advances in how science is practiced, how scientists explore new questions, pursue answers to those questions, and collaborate with colleagues around the world.	-2 -1 0 1 2	1 2 3 4 5
♦ tools for exploring, modeling, simulating and using data for learning, teaching and research are readily accessible.	-2 -1 0 1 2	1 2 3 4 5

<b>With respect to the PHYSICAL INFRASTRUCTURE, <i>what works</i> are spaces that:</b>		
	Is this important to us?	Do we have this?
♦ illustrate responsible ecological impact, with the external envelope as well as the internal fittings contributing to the learning of the community it houses.	-2 -1 0 1 2	1 2 3 4 5
♦ are themselves a laboratory, a living “text” which monitors and tinkers with itself, with mechanical and other systems exposed, with instruments visible and changeable, giving students opportunities to gather realtime data.	-2 -1 0 1 2	1 2 3 4 5
♦ support the sophisticated instrumentation that is central to 21 <sup>st</sup> century research and learning in scientific and technological realms.	-2 -1 0 1 2	1 2 3 4 5
♦ are a beauty to behold, while at the same time is a vehicle for beholding beauty.	-2 -1 0 1 2	1 2 3 4 5
♦ enhance the overall aesthetics of the campus.	-2 -1 0 1 2	1 2 3 4 5

## Characteristics of ideal Spaces for STEM Learning Communities

<b>With respect to serving the GOALS OF THE ACADEMIC PROGRAM, <i>what works</i> is when:</b>												
	Is this important to us?	Do we have this?										
<ul style="list-style-type: none"> <li>◆ spaces make it easy for students to connect what they are learning in classroom and lab to the world beyond the campus and engage in the exploration of real-world problems and possibilities.</li> </ul>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">-2</td> <td style="width: 20%;">-1</td> <td style="width: 20%;">0</td> <td style="width: 20%;">1</td> <td style="width: 20%;">2</td> </tr> </table>	-2	-1	0	1	2	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">1</td> <td style="width: 20%;">2</td> <td style="width: 20%;">3</td> <td style="width: 20%;">4</td> <td style="width: 20%;">5</td> </tr> </table>	1	2	3	4	5
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1	2	3	4	5								
<ul style="list-style-type: none"> <li>◆ spaces accommodate the research-rich, discovery-based approaches that are having documented success in strengthening the learning of 21<sup>st</sup> century undergraduates.</li> </ul>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">-2</td> <td style="width: 20%;">-1</td> <td style="width: 20%;">0</td> <td style="width: 20%;">1</td> <td style="width: 20%;">2</td> </tr> </table>	-2	-1	0	1	2	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">1</td> <td style="width: 20%;">2</td> <td style="width: 20%;">3</td> <td style="width: 20%;">4</td> <td style="width: 20%;">5</td> </tr> </table>	1	2	3	4	5
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<ul style="list-style-type: none"> <li>◆ spaces turn students into scientists, socializing them into the scientific and technological communities, and motivating them to consider careers in related fields.</li> </ul>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">-2</td> <td style="width: 20%;">-1</td> <td style="width: 20%;">0</td> <td style="width: 20%;">1</td> <td style="width: 20%;">2</td> </tr> </table>	-2	-1	0	1	2	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">1</td> <td style="width: 20%;">2</td> <td style="width: 20%;">3</td> <td style="width: 20%;">4</td> <td style="width: 20%;">5</td> </tr> </table>	1	2	3	4	5
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<ul style="list-style-type: none"> <li>◆ spaces support effective pedagogies, including collaborative and problem-based learning, Just-in-Time Teaching, case studies, etc., allowing for the non-disruptive implementation of these tools.</li> </ul>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">-2</td> <td style="width: 20%;">-1</td> <td style="width: 20%;">0</td> <td style="width: 20%;">1</td> <td style="width: 20%;">2</td> </tr> </table>	-2	-1	0	1	2	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">1</td> <td style="width: 20%;">2</td> <td style="width: 20%;">3</td> <td style="width: 20%;">4</td> <td style="width: 20%;">5</td> </tr> </table>	1	2	3	4	5
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<ul style="list-style-type: none"> <li>◆ spaces contain presentation media and network connectivity that is integrated to all teaching and learning spaces, with the potential for constant evolution in how these technologies are used.</li> </ul>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">-2</td> <td style="width: 20%;">-1</td> <td style="width: 20%;">0</td> <td style="width: 20%;">1</td> <td style="width: 20%;">2</td> </tr> </table>	-2	-1	0	1	2	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">1</td> <td style="width: 20%;">2</td> <td style="width: 20%;">3</td> <td style="width: 20%;">4</td> <td style="width: 20%;">5</td> </tr> </table>	1	2	3	4	5
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<ul style="list-style-type: none"> <li>◆ spaces facilitate the building of natural science communities among the students and faculty. ■</li> </ul>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">-2</td> <td style="width: 20%;">-1</td> <td style="width: 20%;">0</td> <td style="width: 20%;">1</td> <td style="width: 20%;">2</td> </tr> </table>	-2	-1	0	1	2	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">1</td> <td style="width: 20%;">2</td> <td style="width: 20%;">3</td> <td style="width: 20%;">4</td> <td style="width: 20%;">5</td> </tr> </table>	1	2	3	4	5
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