OMB #0925-0747

EXP. 11/2019

Attachment 8:

Priority

Consortium

Evaluation

Products

On September 25, 2015, the Consortium-Wide Evaluation Plan (CWEP) was presented to and approved by the Diversity Program Consortium Executive Steering Committee (ESC). The evaluation topics were presented in broad terms (see 2015 CWEP Plan Final) with the understanding that the data would be used to compare outcomes for BUILD vs. non-BUILD participants at BUILD institutions and comparator institutions (with additional analysis focusing comparing outcomes for students from historically underrepresented and well-represented groups in the biomedical sciences), and assess the impact of BUILD on grantee institutions.

This document describes the CEC CWEP Dissemination Products in more detail, tying the evaluation questions and potential positive findings to the associated Hallmark of Success (2019 ESC approved version). For reference, the Evaluation Questions from the 2015 CWEP presentation are listed in the first column and mapped to the updated 2019 Hallmarks to demonstrate the continuity in the CWEP and reflect that although the Hallmarks have been updated, the intent and themes of the consortium-wide evaluation have remained consistent throughout the process. Tables are presented for the BUILD Student, Faculty, and Institution-level products.

Topics listed in these tables are evaluation products and will be produced by the CEC, providing a framework for hypothesis-driven research by any member of the consortium. After submitting a proposal to the Publications and Presentations Subcommittee (PPsC; see P&P Guidelines), consortium members may develop hypothesis-based research to look more closely at these evaluation topics. For additional consortium and research topics open for consideration by consortium writing groups, see the PPsC Master list of Research Topics spreadsheet.

Because of the significant updates that have been made to the NRMN structure, logic model and evaluation plan, evaluation products for NRMN will be outlined and presented at a later time.

BUILD Student

2015 CWEP Evaluation Question	**CWE Hallmark (2019)**	**Updated Evaluation Questions** **For BUILD and non-BUILD students at BUILD and comparator institutions:**	**Potential Positive Findings*** **BUILD students, compared to non-BUILD students at BUILD and comparator institutions, and for underrepresented versus well-represented students across those categories:**
1) Are BUILD under-represented group (URG) students more likely to show increased early predictors (hallmarks) of success in pursuing a biomedical science career when compared to non-BUILD students at the same institution (URG and	High academic self-efficacy (STU-1)	What is the change in academic self-efficacy (SE) over time?	Have a greater increase in academic self-efficacy over time; *note, academic SE commonly declines in the first year – we will see if BUILD students have less decline and later have overall higher SE*
	High self-efficacy as a researcher (STU-2)	What is the change in self-efficacy as a researcher over time?	Have a greater increase in research self-efficacy over time.

2015 CWEP Evaluation Question	CWE Hallmark (2019)	Updated Evaluation Questions For BUILD and non-BUILD students at BUILD and comparator institutions:	Potential Positive Findings* BUILD students, compared to non-BUILD students at BUILD and comparator institutions, and for underrepresented versus well-represented students across those categories:
non-URG) and non-BUILD students at other similar institutions (URG and non-URG)?	High science identity (STU-3)	What is the change in science identity over time?	Have a greater increase in science identify over time.
	Satisfaction with quality of mentorship (STU-4)	How does satisfaction with faculty mentorship change over time?	Are more satisfied with faculty mentorship.
	Perceived sense of belonging within the university (STU-5)	What is the change in perceived sense of belonging within the university?	Have a greater increase in perceived sense of belonging within the university over time.
	Perceived sense of belonging within the research community (STU-6)	What is the change in perceived sense of belonging within the research community?	Have a greater increase in perceived sense of belonging within the research community over time.
	Intent to pursue a career in biomedical research (STU-7)	How does the intent to pursue a career in biomedical research change over time?	Are more likely to express an intent to pursue a biomedical research career over time.
2) Are BUILD URG students compared to non-BUILD students (URG and non-URG) and students at non-BUILD institutions (URG and non-URG) more likely to show increased: - Completion of undergraduate degree in biomedical sciences - Intent to apply to graduate program in biomedical sciences - Application, acceptance, & enrollment in a graduate program in a biomedical sciences	Entry into an undergraduate biomedical degree program (STU-8)	What is the likelihood that intent to pursue a biomedical major results in entering a biomedical major?	Are more likely to enter a biomedical major after reporting their intent to pursue a biomedical major.
	Persistence in biomedical degree or other formal research training program (STU-9)	What is the persistence in biomedical science disciplines over time?	Are more likely to persist in a biomedical science discipline over time.
3) What is the student experience of BUILD	Frequent receipt of mentoring to enhance	How frequently do trainees receive mentoring in areas	Are more likely to receive frequent mentoring in areas that are related to

2015 CWEP Evaluation Question	CWE Hallmark (2019)	Updated Evaluation Questions For BUILD and non-BUILD students at BUILD and comparator institutions:	Potential Positive Findings* BUILD students, compared to non-BUILD students at BUILD and comparator institutions, and for underrepresented versus well-represented students across those categories:
activities and how does that impact program goals?	success in the biomedical pathway (STU-10)	that are related to the biomedical pathway, and has the frequency changed over time?	the biomedical pathway (e.g. research and career mentoring).
	Participation in mentored or supervised biomedical research (STU-11)	What are the rates of participation in mentored or supervised biomedical research, and do they change over time?	Are more likely to participate in mentored or supervised biomedical research.
	Evidence of competitiveness for transitioning into the next phase in the biomedical career pathway (STU-12)	What is the change in indicators of competitiveness for admission to graduate school over time?	Are likely to be more competitive for admission to graduate school (e.g. GPA and research experience).
	Participation in academic or professional organizations related to biomedical disciplines (STU-13)	How does participation in academic & professional organizations change over time?	Are participating more in academic & professional student organizations.
	Evidence of excelling in biomedical research and scholarship (STU-14)	How does evidence of excelling in biomedical research and scholarship change over time?	Are more likely to demonstrate evidence of excelling in biomedical research and scholarship change over time, e.g. conference presentations and biomedical related awards/honors).
	Strong academic and professional networks (STU-15)	What is the change in academic and professional networks over time?	Are more likely to have strong academic and professional networks (e.g. number of different coauthors on publications, number of research and career mentors).
2, part 2) Are BUILD URG students compared to non-BUILD students (URG and non-URG) and students at non-BUILD institutions (URG and non-URG) more likely to show increased: - Completion of	Completion of biomedical degree or other formal training program (STU-16)	Is there a difference in completion of undergraduate degree in biomedical sciences? (medium-term outcome)	Are more likely to complete a biomedical science degree over time.
	Application and acceptance to a subsequent research	Is there a difference in application and acceptance in a	Are more likely to apply and to be accepted in a research-oriented biomedical post-bac or graduate

2015 CWEP Evaluation Question	CWE Hallmark (2019)	Updated Evaluation Questions For BUILD and non-BUILD students at BUILD and comparator institutions:	Potential Positive Findings* BUILD students, compared to non-BUILD students at BUILD and comparator institutions, and for underrepresented versus well-represented students across those categories:
undergraduate degree in biomedical sciences - Intent to apply to graduate program in biomedical sciences - Application, acceptance, & enrollment in a graduate program in a biomedical sciences	training program in a biomedical discipline (STU-17)	subsequent research training program in a biomedical science program? (medium-term outcome)	program over time.
	Entrance into a subsequent research training program in a biomedical discipline (STU-18)	Is there a difference in entrance (matriculation) into a subsequent research training program in a biomedical discipline? (medium-term outcome)	Are more likely to enter (matriculate) in a research-oriented biomedical post-bac or graduate program over time.

BUILD Faculty

2015 CWEP Evaluation Question	CWE Hallmark (2019)	Evaluation Questions For BUILD and non-BUILD faculty at BUILD and comparator institutions:	Potential Positive Findings BUILD faculty, compared to non-BUILD faculty at BUILD and comparator institutions:
3) What is the faculty experience of BUILD activities and how does that impact program goals?	High self-efficacy as an instructor in a biomedical field (FAC-1)	What is the level of instructor self-efficacy in a biomedical field, and how does it change over time?	Are more likely to show high, or increased, instructor self-efficacy over time.
	High self-efficacy as an instructor to a diverse group of biomedical students (FAC-2)	What is the level of instructor self-efficacy to a diverse group of biomedical students, and how does it change over time?	Are more likely to show high, or increased, instructor self-efficacy in teaching to a diverse group of biomedical students over time.
1) Are BUILD faculty compared to non-BUILD faculty and faculty in non-BUILD institutions more likely to show increased mentor self-efficacy, mentoring, and quality of mentoring?	High self-efficacy as a mentor to biomedical research trainees (FAC-3)	What is the level of self-efficacy as a mentor to biomedical research trainees, and how does it change over time?	Are more likely to show high, or increased, mentor self-efficacy over time.
	High self-efficacy as a mentor to a diverse group of biomedical research trainees (FAC-4)	What is the level of mentor self-efficacy in working with diverse groups of biomedical research trainees, and how does it change over time?	Are more likely to show high, or increased, mentor self-efficacy to a diverse group of biomedical students over time.
	Frequently mentors students, post-docs, and/or more junior faculty on biomedical-related issues (FAC-5)	What is the frequency of mentoring, and does it change over time?	Are more likely to engage in mentoring, and to report increases over time.
2) Are BUILD faculty compared to non-BUILD faculty and faculty at non-BUILD institutions more likely to show increased research self-efficacy, research, and scholarly productivity?	High self-efficacy as an independent biomedical researcher (FAC-6)	What is the level of self-efficacy as an independent biomedical researcher, and how does it change over time?	Are more likely to show high, or increased, self-efficacy as independent biomedical researchers over time.
	High self-efficacy in the ability to secure external funding (FAC-7)	What is the level of self-efficacy in securing external funding, and how does it over time?	Are more likely to show high, or increased, self-efficacy in securing external funding over time.
	Engaged in activities to	What is the level of	Are more likely to show high, or

2015 CWEP Evaluation Question	CWE Hallmark (2019)	Evaluation Questions For BUILD and non-BUILD faculty at BUILD and comparator institutions:	Potential Positive Findings BUILD faculty, compared to non-BUILD faculty at BUILD and comparator institutions:
	secure research or research training funding (FAC-8)	activity to secure research or research training funding, and how does it change over time?	increased, activity to secure research or research training funding over time.
	Securing research or research training funding (FAC-9)	What is the level of success in securing external funding, and how does it change over time?	Are more likely to show high, or increased, success in securing external funding.
	Evidence of scholarly productivity (FAC-10)	What is the level of scholarly productivity, and how does it change over time?	Are more likely to show increased scholarly productivity over time.
	Evidence of professional recognition and service (FAC-11)	What is the level of professional recognition and service, and how does it change over time?	Are more likely to show increased professional recognition and/or service over time.
3, part 2) What is the faculty experience of BUILD activities and how does that impact program goals?	Strong academic and professional networks (FAC-12)	How robust are their professional and academic networks, and how does it change over time?	Are more likely to have expanded their professional and academic networks over time (e.g. numbers of coauthors on publications, presenting at scientific conferences, holding office in professional organizations, providing service to federal or other agencies).
2, part 2) Are BUILD faculty compared to non-BUILD faculty and faculty at non-BUILD institutions more likely to show increased research self-efficacy, research, and scholarly productivity?	Advancement to next career stage (FAC-13)	What promotions and/or career advancements have taken place over time?	Are more likely to have advanced in their career (e.g., promotions, tenure)
3, part 3) What is the faculty experience of BUILD activities and how does that impact program goals?	Advancement to leadership positions in biomedical research and research training (FAC-14)	What administrative or leadership roles have they held over time?	Are more likely to have held administrative and/or leadership roles over time.
	Evidence of receiving training in areas to foster inclusive research training	What trainings to foster inclusive research training environments	Are more likely to have received trainings to facilitate inclusive research training environments over

2015 CWEP Evaluation Question	CWE Hallmark (2019)	Evaluation Questions For BUILD and non-BUILD faculty at BUILD and comparator institutions:	Potential Positive Findings BUILD faculty, compared to non-BUILD faculty at BUILD and comparator institutions:
	environments (FAC-15)	have individuals received over time?	time
	Strong self-efficacy to act as a change agent to enhance diversity in biomedical research and research training environments (FAC-16)	What is the level of self-efficacy to act as a change agent to enhance diversity in biomedical research and training environments, and how does this change over time?	Are more likely to show high, or increased, activity self-efficacy to act as a change agent to enhance diversity over time.
1, part 2) Are BUILD faculty compared to non-BUILD faculty and faculty in non-BUILD institutions more likely to show increased mentor self-efficacy, mentoring, and quality of mentoring?	Uses evidence-based practices in teaching and mentoring (FAC-17)	How frequently are evidence-based practices used in teaching and mentoring, and how does that change over time?	Are more likely to use evidence-based practices in teaching and mentoring, and to report increases over time.

BUILD Institutional

2015 CWEP Evaluation Question	CWE Hallmark (2019)	Evaluation Questions In comparison to pre-BUILD baseline:	Potential Positive Findings When compared to the pre-BUILD baseline, BUILD institutions are currently more likely to:
2) How have BUILD institutions embraced organizational changes that promote institutional commitment to diversity?	Commitment to efforts that create, enhance and/or maintain diversity and inclusion at all levels of the institution (INST-1)	What efforts have been made to create, enhance and/or maintain diversity and inclusion at all levels of the institution changed over time?	Demonstrate increased commitments to institutional efforts to create and enhance diversity and inclusion at all levels of the institutions. If institutions were initially at a high level, they will have maintained these efforts.
1) How have BUILD and partner institutions developed the capacity for biomedical science research training and mentoring and in what ways is this sustainable?	Evidence of creating, enhancing, and/or maintaining diverse, inclusive and culturally appropriate research and research training environments (INST-2)	What evidence is there of creating, enhancing and/or maintaining diverse, inclusive and culturally appropriate research training environments over time?	Show evidence that they have created and enhanced diverse, inclusive and culturally appropriate research training environments. If institutions were initially at a high level, they will show evidence of maintaining these environments.
2, part 2) How have BUILD institutions embraced organizational changes that promote institutional commitment to diversity?	Demonstrated institutional commitment to creating, enhancing and/or maintaining the diversity of the biomedical faculty on campus by recruiting a diverse pool of potential applicants (INST-3)	Has the institution taken steps to recruit a diverse pool of potential applicants for biomedical faculty?	Have taken steps to recruit a diverse pool of potential applicants for biomedical faculty.
	Implementation of sustainable, institutionally supported intra-institutional activities to achieve positive outcomes related to biomedical research capacity building and faculty development (INST-4)	What sustainable, intra-institutional activities have been implemented to achieve positive outcomes related to biomedical research capacity building and faculty development over time?	Have implemented sustainable, intra-institutional activities and to demonstrate progress toward achieving positive outcomes related to biomedical research capacity building and faculty development.
	Enhanced inter-institutional collaborations to achieve positive outcomes related to biomedical research,	How have new inter-institutional collaborations been developed to achieve positive	Have developed and/or enhanced inter-institutional collaborations to demonstrate progress

2015 CWEP Evaluation Question	CWE Hallmark (2019)	Evaluation Questions In comparison to pre-BUILD baseline:	Potential Positive Findings When compared to the pre-BUILD baseline, BUILD institutions are currently more likely to:
	research training, and faculty development (INST-5)	outcomes related to biomedical research, research training, and faculty development? If applicable, how have pre-existing inter-institutional collaborations been leveraged to achieve positive outcomes related to biomedical research, research training, and faculty development?	toward achieving positive outcomes related to biomedical research, research training, and faculty development.
	Implementation of sustainable, institutionally supported activities to achieve positive outcomes related to biomedical research training (INST-6)	What sustainable, institutionally supported activities to achieve positive outcomes related to biomedical research training have been implemented over time?	Have implemented sustainable, institutionally supported activities and made progress toward achieving positive outcomes related to biomedical research training.
3) Does the number and/or diversity of students graduating in biomedical sciences in BUILD institutions increase over time?	Enhancing or maintaining the diversity of students, e.g., those from nationally underrepresented groups, who pursue degrees in biomedical fields (INST-7)	What changes are there in the numbers and demographics of students enrolled in biomedical science majors over time?	Have enhanced demographic diversity among students pursuing degrees in biomedical fields (or maintained if initially at high level). These changes will be greater than changes seen at comparator institutions.
	Demonstrated institutional commitment to efforts that sustain the interest of trainees from all backgrounds pursuing degrees in biomedical fields that increase persistence (INST-8)	How have the numbers and demographics of students enrolled in majors/ minors in biomedical sciences changed over time?	Have enhanced the number and diversity of students graduating in biomedical sciences (or maintained if initially at a high level).
	Employs evidence-based approaches to establish and attain goals for graduation rates, time-to-degree, and the ability to transition to biomedical graduate and professional degree programs for	What evidence-based approaches have been employed to attain goals for graduation rates, time-to-degree, and the ability to transition to biomedical graduate and professional degree programs for	Will have employed evidence-based approaches to attain institutional goals for graduation rates and time-to-degree for students from all backgrounds. In addition, students from all backgrounds who graduate

2015 CWEP Evaluation Question	CWE Hallmark (2019)	Evaluation Questions In comparison to pre-BUILD baseline:	Potential Positive Findings When compared to the pre-BUILD baseline, BUILD institutions are currently more likely to:
	students from all backgrounds (INST-9)	students from all backgrounds?	will have improved abilities to transition to biomedical graduate and professional degree programs.
1, part 2) How have BUILD and partner institutions developed the capacity for biomedical science research training and mentoring and in what ways is this sustainable?	Demonstrated institutional commitment to implementing and sustaining mentoring practices that promote the development of research-oriented students from all backgrounds (INST-10)	What commitments to implement and sustain mentoring practices that promote the development of research-oriented students from all backgrounds have been implemented?	Demonstrate increased commitment to implement and sustain mentoring practices that promote the development of research-oriented students from all backgrounds.
3, part 2) Does the number and/or diversity of students graduating in biomedical sciences in BUILD institutions increase over time?	Institutional infrastructure to track regular reporting of student demographics and outcomes with respect to biomedical fields (INST-11)	How has the institutional infrastructure to track regular reporting of student demographics and outcomes with respect to biomedical fields been improved over time?	Demonstrate a structured way to track and regularly report on student demographics and outcomes with respect to biomedical fields (e.g., well-staffed Institutional Records office)

Note: Case studies will be the primary method for evaluating the BUILD institutional-level hallmarks. Data from Institutional Records requests and the National Center for Science and Engineering Statistics (NCSES) can be used to supplement these data. The CEC will use the case studies of BUILD institutions to identify areas of institutional change that contributed to positive outcomes. The case studies will identify the challenges in achieving institutional change as well as the conditions that made change possible. *BUILD Case Study Data cannot be anonymized, it will only be available for use by the CEC; it is not be accessible to consortium members through data requests.*