LOGIC MODELS
Part 1: Theory and Fundamentals

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Logic Model Learning Series

- Session 1 focuses on the theory and fundamentals of logic models
- Future sessions will provide opportunities to create a logic model, interact with grantees who have created successful logic models, and learn how to align your logic model to your evaluation plan

Title III and Title V Programs at the U.S Department of Education (ED)

- The Title III and Title V programs strengthen institutions serving Hispanic and other low-income students. These programs provide financial assistance to help institutions solve problems that threaten their ability to survive, to improve their management and fiscal operations, and to build endowments.

- The Title III and Title V programs are managed by the Institutional Service (IS) of the Higher Education Programs (HEP) office of the Office of Postsecondary Education (OPE). The IS administers programs authorized under Title III, Title V, and Title VII of the Higher Education Act (HEA) of 1965, as amended.

Purpose of HSI and MSI programs

- The HSI and other Minority-Serving Institutions (MSI) programs provide funding for institutional change and cover a broad array of student services (including academic and social services), strengthening of academic programs, infrastructure improvement, and other services in order to support the success of 1st generation, low-income, immigrant, or otherwise underserved students AND their families and communities. These programs are not just another source of funding – they are transformational grants to bring about system-wide change at schools as they serve students, their families, and their communities.

HSI Division Programs at ED

Developing Hispanic-Serving Institutions (DHSI)- Title V, Part A
https://www2.ed.gov/programs/idueshsi/index.html

Promoting Postbaccalaureate Opportunities for Hispanic Americans (PPOHA)-Title V, Part B
https://www2.ed.gov/programs/ppoha/index.html

Hispanic-Serving Institutions STEM and Articulation Program (HSI STEM), Title III, Part F
https://www2.ed.gov/programs/hsistem/index.html

Development of Grant Proposals and Why Provide Evidence

Educators want to implement programs, practices, products, and policies that work for their student population.

ESSA evidence tiers are designed to ensure that state, districts, and schools are able to identify practices that work.

Using high-quality research and evidence-based interventions, such as those identified by the What Works Clearinghouse (WWC), helps to strengthen grant applications, support comprehensive and targeted schools, and implement new programming.

ESSA/EDGAR Levels of Evidence

Evidence Requirement	Level of Evidence			
	Strong Evidence	*Moderate Evidence*	*Promising Evidence*	*Demonstrates a Rationale*
Outcomes	At least one statistically significant and positive effect on a relevant outcome; no statistically significant and negative effects on a relevant outcome	At least one statistically significant and positive effect on a relevant outcome; no statistically significant and negative effects on a relevant outcome	At least one statistically significant and positive effect on a relevant outcome	Not Applicable
Study Design	Experimental study	Experimental study or quasi-experimental design study	Experimental study, quasi-experimental design study, or correlational study with statistical controls for selection bias	Logic model informed by research or evaluation findings
WWC Evidence Rating	Meets WWC without reservations	Meets WWC with or without reservations	Not Applicable	Not Applicable
Sample Size	A large sample (n = 350+) and a multi-site sample	A large sample (n = 350+) and a multi-site sample	Not Applicable	Not Applicable

HSI Programs' Use of Evidence

- **PPOHA 2022** – Under Project Design selection criterion, factor (1) "The extent to which the proposed project demonstrates a rationale (as defined in this notice)" and factor (2) "The extent to which the proposed project is supported by promising evidence (as defined in this notice)"

- **DHSI 2022** – Under Project Design selection criterion, factor (1) "The extent to which the proposed project demonstrates a rationale (as defined in this notice)" and factor (2) "The extent to which the proposed project is supported by promising evidence (as defined in this notice)"

- **HSI-STEM 2021**-Under Project Design selection criterion, factor (3) "The extent to which the proposed project demonstrates a rationale (as defined in this notice)" and factor (4) "The extent to which the proposed project is supported by promising evidence (as defined in this notice)"

Definitions used in HSI Programs

1

Demonstrates a rationale: means a key project component included in the project's logic model is informed by research or evaluation findings that suggest the project component is likely to improve relevant outcomes.

2

Logic model: (also referred to as a *theory of action*) means a framework that identifies key project components of the proposed project (*i.e.,* the active ''ingredients'' that are hypothesized to be critical to achieving the relevant outcomes) and describes the theoretical and operational relationships among the key project components and relevant outcomes.

3

Promising Evidence: means that there is evidence of the effectiveness of a key project component in improving a relevant outcome, based on a relevant finding from a WWC practice guide or intervention report or a single study reviewed by the Department

Use logic models to meet the evidence standard <u>and</u> to innovate

- When you create a logic model, you are creating a **visual representation** of your project. This visual representation includes any activity, strategy, intervention, process, product, practice, or policy included in your project.
- When **logical relationships** are built on theory and evidence, you can explore outputs, outcomes, and impact that would best serve your project.
- By responding to the Demonstrates a Rationale evidence tier through your logic model, you have the opportunity to **innovate** and test new research in promising practices.

Sample Logic Model
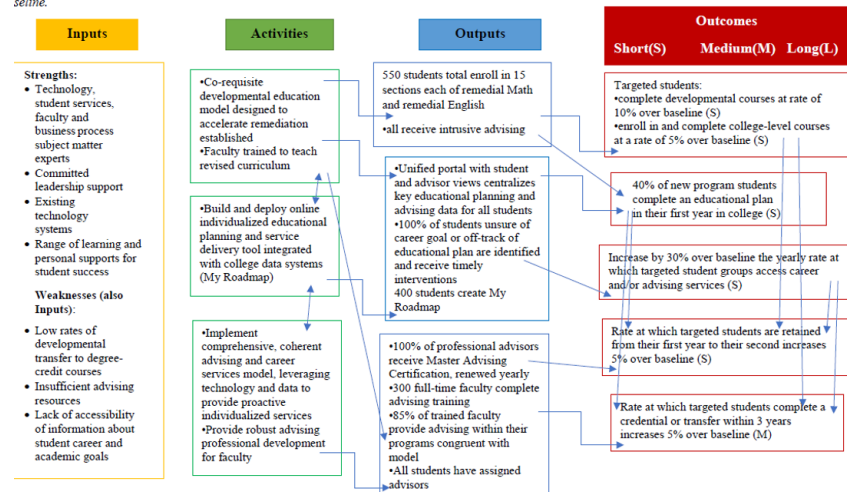
# B. Quality of Project Design (Up to 15 points)

- (1)   The extent to which the proposed project **demonstrates a rationale** (as defined in this notice) (Up to 10 points);

- (2) The extent to which the proposed project is supported by **promising evidence** (as defined in this notice) (Up to 5 points).

To establish that their projects "demonstrate a rationale," **applicants must use a logic model (as defined in this notice) and identify research or evaluation findings** suggesting that a key project component is likely to improve relevant outcome. To establish that their projects are supported by "promising evidence," **applicants should cite the supporting study or studies that meet the conditions in the definition of "promising evidence" and attach the study or studies as part of the application attachments (or provide a live URL).** In addressing "promising evidence," applicants are encouraged to align the direct student services proposed in the application to evidence-based practices identified in the selected studies.

- Demonstrates a rationale: Develop the logic model
- Promising evidence: Cite the research on which your logic model is based using the ED Evidence Form, OMB No. 1894-001)

Learnings Goals for this Session

- Demonstrate how logic models are part of the evidence-building journey for grant work

- Introduce logic models as an effective tool for program and policy design, implementation, and evaluation
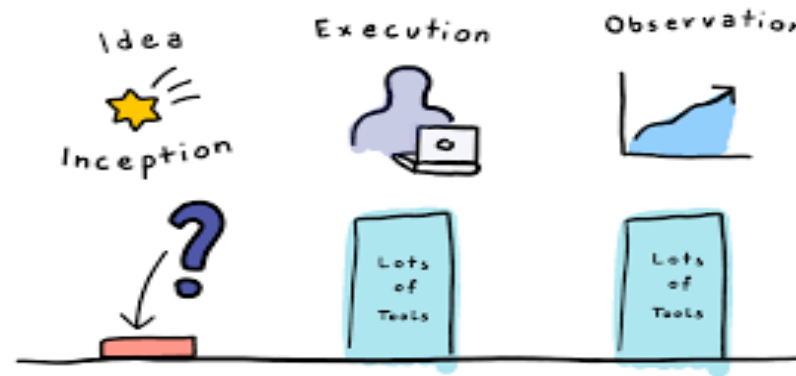
- Provide guidance on the appropriate steps for building a logic model for a program or initiative

Key Points about Logic Models

- It is the process of creating a logic models that is most valuable…it makes you think about what you are trying to accomplish and how you can do it

- Logic models communicate the intent of a program and its rationale

- Over time, you should review and revise your logic model to make sure it remains relevant

What Is a Logic Model?

- Where are you going?

- How will you get there?

- What will tell you that you have arrived?

If the project is a journey, your logic model is the map.
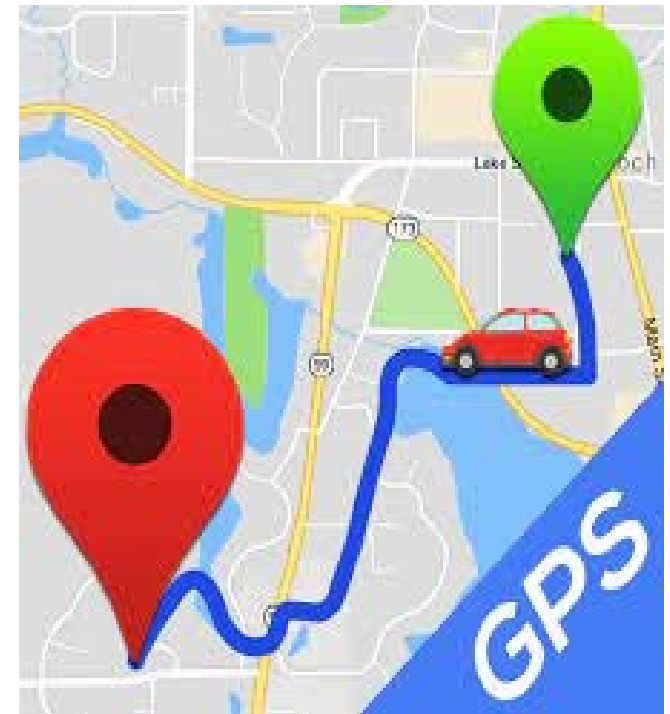
What Is a Logic Model?

A logic model:

- Provides a simplified picture of the relationships between the program inputs and the desired outcomes of the program

- Is a framework for:
  - Planning/Designing
  - Implementation
  - Monitoring
  - Evaluation

- Is a graphic and explicit representation of relationships, assumptions, and rationale

What Is a Logic Model?

A logic model is not:

- A strategic plan or a fully developed plan for designing or managing a program or policy

- An evaluation design or an evaluation method

Another way to think of a logic model is a way to link your <u>resources</u> to your <u>activities</u> and then to your <u>goals</u> in a succinct manner.

What Is a Logic Model?

Types of logic models:

- Theory approach model: Conceptual, emphasizes theory of change (program design)

- Activities approach model: Activities and relationships, detailed steps (program management and implementation)

- Outcomes approach model: Connects resources and activities with results and outcomes, may break up outcomes and impacts over time segments (program evaluation)

What Is a Logic Model?

The simplest form of a logic model:

INPUTS → **OUTPUTS** → **OUTCOMES**

What Is a Logic Model?

The simplest form of a logic model:

INPUTS ⟶ **OUTPUTS** ⟶ **OUTCOMES**

Inputs: What is invested in the program (e.g., money, people, time, and space) (what we invest)

Outputs: What is done in the program (e.g., program strategies and activities) (what we are doing)

Outcomes: What results from the program (i.e., short- and long-term outcomes) (what are our goals)

Elements of a Logic Model

| | Problem Statement | |

| Resources (inputs) | Strategies and Activities | Outputs | Short-Term Outcomes | Long-Term Outcomes | Impacts |

| | Assumptions | |
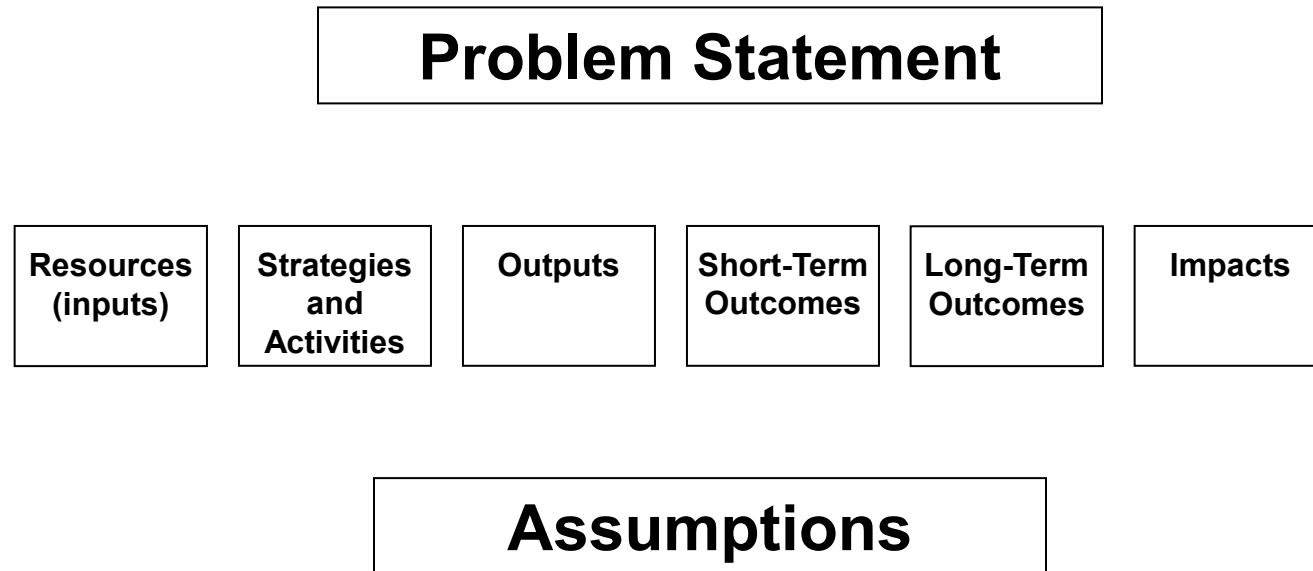
Elements of a Logic Model

The elements of a logic model:

- Problem statement

- Short- and long-term outcomes

- Impacts

- Outputs

- Strategies and activities

- Resources (inputs)

- Assumptions

Elements of a Logic Model: Problem Statement

Problem statement: The problem or challenge that the program or policy is designed to address

Questions to ask in defining the problem:

- What is the problem or issue?

- Why is this a problem?

- For whom does this problem exist?

- Who has a stake in the problem?

- What is known about the problem (through previous work, research, etc.)?

Elements of a Logic Model: Outcomes

Outcomes: What difference does it make?

Elements of a Logic Model: Outcomes

Outcomes: What difference does it make?

Short-term ➡ Long-term ➡ Impacts

Elements of a Logic Model: Outcomes

Outcomes: What difference does it make?

Short-term → Long-term → Impacts

Most immediate and measurable results for participants that can be attributed to strategies and activities

Elements of a Logic Model: Outcomes

Outcomes: What difference does it make?

Short-term → Long-term → Impacts

Short-term	Long-term	Impacts
Most immediate and measurable results for participants that can be attributed to strategies and activities	More distant, though anticipated, results of participation in strategies and activities	

Elements of a Logic Model: Outcomes

Outcomes: What difference does it make?

Short-term ➡ Long-term ➡ Impacts

Most immediate and measurable results for participants that can be attributed to strategies and activities	More distant, though anticipated, results of participation in strategies and activities	Desired outcomes of long-term implementation of strategies and activities, dependent on conditions beyond the scope of the program

Elements of a Logic Model: Outcomes

Outcomes: What difference does it make?

Short-term ➡️ Medium-term ➡️ Long-term

LEARNING	ACTION	CONDITIONS
➢ Awareness	➢ Practice	➢ Social
➢ Knowledge	➢ Policies	➢ Economic
➢ Skills	➢ Behavior	➢ Civic
➢ Attitudes	➢ Organizational change	➢ Environmental
➢ Opinions	➢ Social action	
➢ Motivations		
Can usually be controlled by the project	Project may have some influence	Cannot be controlled by the project

Elements of a Logic Model: Outcomes

Outcomes Checklist

- Important
- Reasonable
- Realistic
- Unintentional, possibly negative

Elements of a Logic Model: Strategies and Activities

Strategies and activities: What you propose to do to address the problem

Activities, services, events, and products:

- Are designed to address the problem

- Are, together, intended to lead to certain outcomes

Elements of a Logic Model: Resources

Resources (inputs): The material and intangible contributions that are or could reasonably be expected to be available to address the problem

Examples:

- Money, materials, and equipment (material/tangible)

- People, time, and partnerships (intangible)

Resources are the inputs that enable the creation of the strategies and activities that are designed to respond to the stated problem.

Elements of a Logic model: Assumptions

Assumptions: Beliefs about participants, staff, the program, and how change or improvement may be realized

Make explicit all implicit assumptions:

- Assumptions can be internal and external.

- Ask: What is known, and what is being assumed?

The Logic in a Logic Model

The theory embedded in the model…
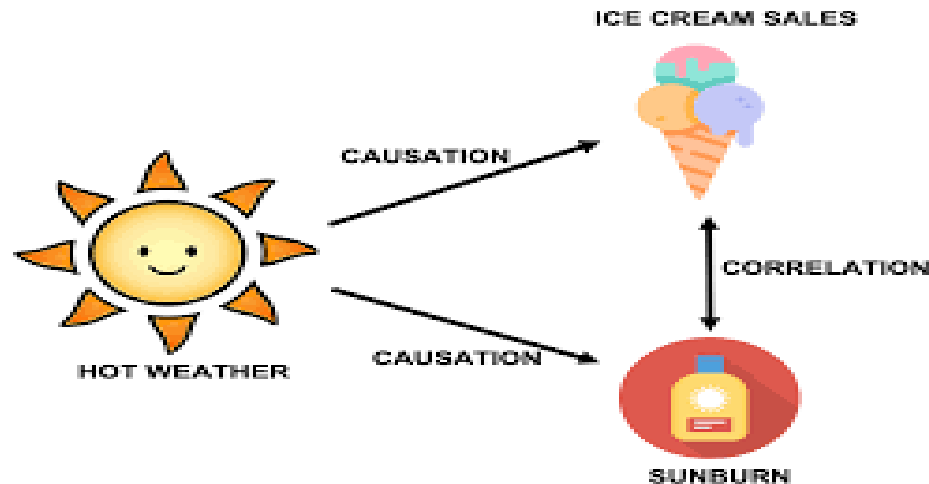
A series of *if-then statements* across the model, i.e., causal relationships

Next Steps

Ask yourself the following:

- Do I understand the elements of the logic model and how they differ?

- Who should I consult in developing the model? What colleagues and stakeholders should be participants in developing the logic model?

- Who will shepherd or see through the development of the logic model?

- How do I know we have captured the theory of action?

- How will we use the logic model?

- How will we ensure we make it a living document?

Final Thoughts on Logic Models

Some final thoughts…

•Logic models are tools for program design, implementation, and evaluation.

•The process of developing a logic model is important: Engage stakeholders in developing a logic model.

•Logic models should be living documents and returned to frequently.

•Logic models are useful for evaluation but best when developed at the program design phase.

•Lean on colleagues who have developed logic models to assist you.

Example of funded project LM 1 – Otero Junior College (CO)/DHSI

INPUTS ➞ ACTIVITIES ➞ OUTPUTS ➞ OUTCOMES

Resources	Aspects of the Program	Observable Products	Outcomes

Federal Funds	• Orientation activities:
	  -Online
	  -In-person
	  -Welcome Day
		• Programs that focus on the unique needs of first-generation students, including orientation, mentoring, service learning, financial literacy training, career exploration programming	**Short-Term**
			• Sharing of ideas with faculty, staff and students
			• Programs start (orientation, mentoring, service learning, research, financial literacy, career exploration, professional development)
			• Initial satisfaction with programs offered
			• Faculty implement new techniques

Internal Resources:
• Administrative buy-in
• Project oversight (VP of Academic and Student Services)
• Staff not funded by the grant
• Space for activities
	• Mentoring
	  -By faculty/staff
	  -By peers		

	• Mentoring of new staff and faculty by existing employees	• Culture of diverse pedagogical teaching	**Mid-Term** • Students report a sense of belonging • Faculty demonstrate improved knowledge of teaching to diverse populations • Updated curricula • Practices implemented to promote student learning, achievement, and goal attainment • Retention, transfer, and graduation rates begin to show improvement • Faculty and staff show buy-in to new pedagogical strategies
Personnel: • Project Director • Retention Specialist • Faculty Professional Development Lead • Case Manager • Faculty Mentors • Peer Mentors	• Service learning • Research projects • Financial Literacy programs	• Internal cohort of faculty and staff to assist with providing professional development	
Student input	• Career Exploration	• Evaluation tools and documents	
Faculty stipends for professional development, mentoring, and experiential learning	• Development of a Case Management culture	• Presentations, journal reports and other program information	**Long-Term** • Student engagement is increased • Faculty adopt pedagogical changes • Psychologically and physically supportive environment for students • Retention, graduation and transfer rates improve • Grant-funded programs sustained • Comprehensive systems in place for improving retention rates
Funds for professional development activities	• Ongoing and intensive faculty training	• Pedagogical changes related to better serving Hispanic, low-income and first-generation students	
Supplies and Equipment	• Faculty mini-grants		
Consultants	• Ongoing training of grant-funded staff	• Improved data collection and analysis procedures	
Evaluation Results	• Classroom technology improvements		

Example of funded project LM 2 – EDP University (PR)/HSI STEM

PRG-STEM LOGIC MODEL

Resources	Activities	Outputs	Outcomes Short	Outcomes Medium	Outcomes Long
Project's Staff	*Tutoring Program (WWC)	Enhanced Tutoring and Mentoring Programs	Improved students' academic performance through student support services	Increased number of students ready to join the workforce	Increase persistence and graduation rates
Faculty	Mentoring Program	Well trained faculty and an improved teaching and learning process	Work-based learning experiences	Increased number of students with passing GPA of C and better	100% of faculty using innovative teaching strategies as well as the efficient use of technology-based teaching techniques
Campus Administrators	Faculty Development	Improved curriculum methodologies using technology-based support	Faculty members' positive attitudes toward new technologies increased	Faculty members' proficiency in multimedia instructions	Improved teaching and learning environment
Time	Curriculum Development	Enhanced Campus infrastructure to support the teaching-learning environment	Enhanced curriculum (Math, Science, English, Spanish)	Innovative and improved Curriculum	Improved academic programs and institutional management
Funding	Enhancement of the Campus Technological Infrastructure	Articulation of 2+2 curriculum that will ensure seamless transfer	Laboratories, physical facilities expanded	Better network support for new technologies and equipment,	Model Seamless Transfer Agreement,
Research base	Development of Seamless Transfer Agreement	Internship program	Articulation agreements for EDP's STEM AA and BA programs	Seamless transfer	Increased numbers of Hispanics in IT workforce
Materials	Student Tracking System				
Equipment	Internship Program				
Technology					

Possible evaluation questions: 1) To what degree has the tutoring and mentoring programs improved to increase the retention and graduation rates?; 2) To what degree have technological upgrades contributed to improve curriculum and enhance the teaching/learning environment?; 3) To what degree have the improvements of Technology laboratories contributed to the acquisition of students' competencies?; 4) To what degree have the improvements to the campus technological infrastructure supported new curriculum and academic programs?; 5) To what degree has the access of Hispanic students to online and multimedia instructional materials increased?; 6) To what degree has faculty development contributed to improve student outcomes?; 7) To what degree has the Internship experience contributed to retention and graduation rates; and 8) To what degree has the Articulation Agreement contributed to increase transfer and graduation

Example of funded project LM 3 – Dominican University/PPOHA

Criterion b) iii. The Project Demonstrates a Rationale in a LOGIC MODEL [33] (5 points)

Beneficiaries/Resources	Activities	Rationale in Research & Practice (see more, p. 24)	Short/Long-Term Outcomes
People: • Student Cohorts • Advising Center Staff • Skills Coaches • Executives in Residence (EiRs) • Scholarships *Office Support/Fiscal:* • Budget office • HSI Grant resources • Graduate Database • Scholarships	**Part 1. Graduate Services** • Goal Clarification strategy • Access 24/7 online advising • Staff access early evenings • Skills Support Coaches • Executives in Residence • **Bilingual Financial Literacy forums CPP2** [34] • Substantial Scholarships • Grad-student data base • 6-hour Listo (Boot Camp)	*Part 1: Graduate Student Services: career advising, skills support, EIR mentors & scholarships.* **Morisano, et al. 2010. (WWC-approved study)**; ETS & Council of Graduate Schools, 2012. ERIC.ed.gov; Cannon, J. 2013, *Intrusive Advising, Academic Advising Today*, nacada.ksu; Excelencia: What Works for Latino Student Success in H.E., 2012-16; Bensimon, et al., CUE, Center for Urban Education, USC. 2011-2015; Tomas Rivera Center, UT San Antonio, 2016; National Career Development Assoc. 2008, *Holland's RIASEC*; Dweck, C. (2012). *Mindset: How you can fulfill your potential.* Constable & Robinson Limited.	*Stronger Hispanic outcomes:* • Increased # of Hispanic students enrolled in graduate programs. • Increased Hispanic enrollment across grad programs by 15%. • Advising, skills gaps close. • Higher completion rates. • Equity and service gaps narrow; DU capabilities more solid. • Mentoring (EiRs) improves networking/professional success. • DU fiscal stability improves.
People: • Student Cohorts in new Pathways and degrees • Faculty re-assigned • Faculty on Stipends • Coordinating staff • Faculty Teams • Faculty training • Faculty in partnership w/ Concordia Univ.	**Part 2. New Programs** *Services to Students* • Fast-Track Pathways to grad school for undergrads • New degree/certificate programs for needed jobs • Online curricula expanded for expediting completion • Cybersecurity Certificate with Concordia U. **CPP1**	*Part 2: Fast-Track Pathways, High-Demand Degrees, Collaborative Certificate* Fast-Track Pathways: Gobel, R. 2018, *Benefits of Accelerated Bachelor's/Master's*, Investopedia.com; Wlodkowski, R. 2003. "*Accelerated Learning in Colleges and Universities*"; Collegis Education Report. 2018 DU; Global Management: Dumont, M. 2018 *Traditional MBA or Graduate Degree?;* Nutrition: Hickson, M. 2018. "*Future Dietitian 2025*"; Bureau of Labor Statistics, 2019. Baldwin, r. & D. Chang. AAC&U Fall 07, Vol 9, # 4.	*New Programs:* • Fast-Track Pathway enrollees increased to 12% (from 7%). • Students prepared in high-demand, lucrative professions. • Online curricula expanded. • New programs, new degrees. • Faculty updated in new careers, professions. • Cybersecurity Certif. **CPP1**
People: • Student Cohorts in Classroom Pilots • Faculty trainees who re-design a course for equity & inclusiveness • Culture Consultants • Internal training staff	**Part 3. Inclusive Curricula** *Services to Students:* • Inclusive pedagogy • Cultural validation • Cultural competence *Services to Faculty:* • New methods, curricula for engaging Hispanic & other underserved students.	*Part 3: Classroom Equity & Inclusiveness* Rendon, L., S. Munoz. *Revisiting Validation Theory: Theoretical Foundations, Applications, and Extensions.* Enrollment Management Journal, Summer 2011; Hurtado, S., R. Alvarado, A. 2015 *Thinking about race:* Journal of H.E. 86 (1), 127-155; Excelencia 2012-18: *What Works for Latino Student Success in H.E.*; White House Webinars, White papers, 2016-18; Bensimon, et al., CUE: 2011-2018; Tomas Rivera Ctr, UT San Antonio, 2016; Hurtado, 2012.	*Stronger Equity:* • Significant positive indicators of curricular change & re-design • Curriculum and pedagogy reflect more connections to Hispanic culture and first-gen students. • Students perceive respect & inclusiveness is improved in key graduate courses.

Example of funded project LM 4 (Part 1) – Sacramento State/HSI STEM

Table a5. Project STEM4Equity Logic Model   *WWC evidence of promise – bold and italic font*

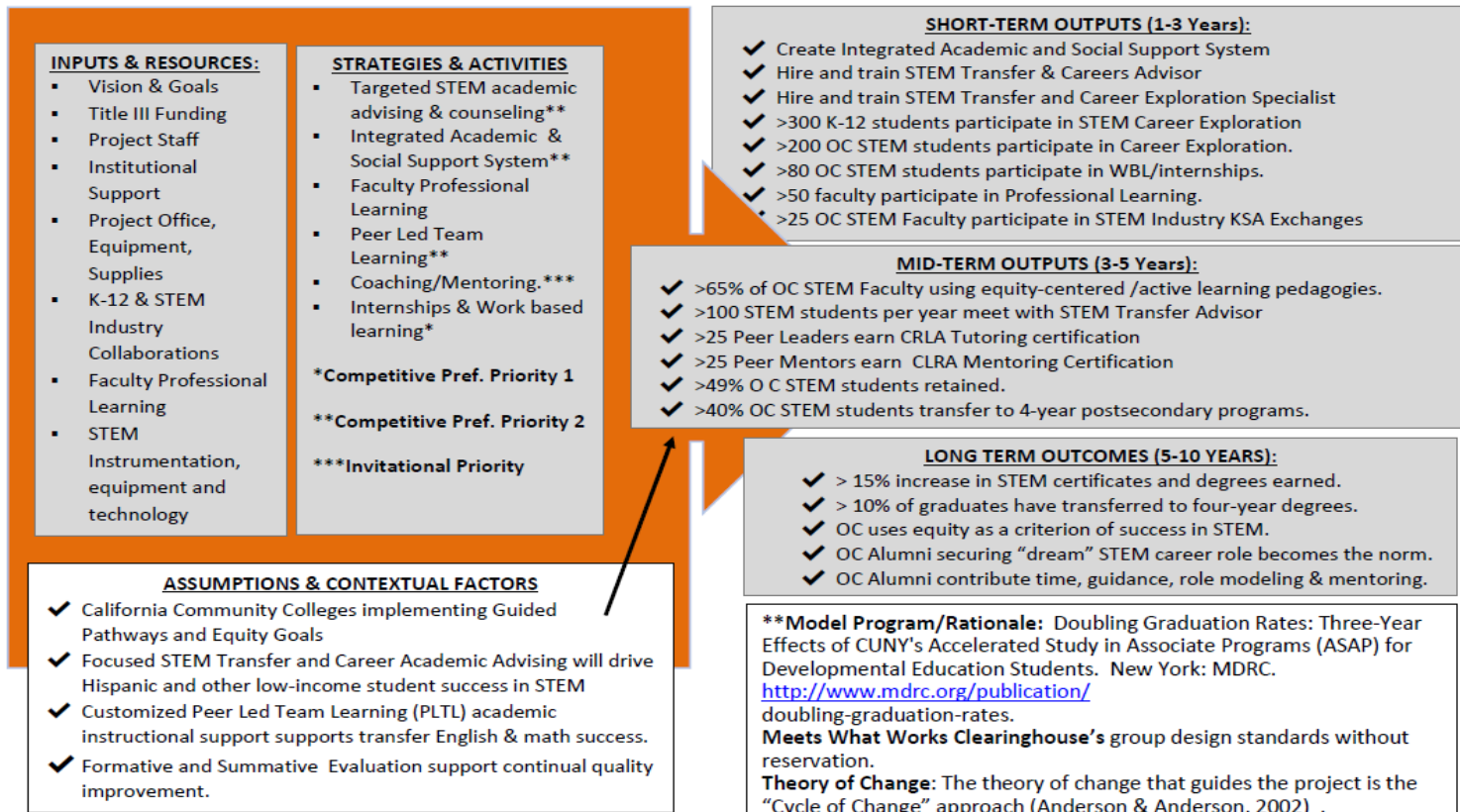| Resources	Activities	Outputs	Outcomes		
			Short term	Medium term	Long term/Impact
1.STEM Course and Curriculum Redesign for Equity					
• Center for Teaching and Learning experience delivering customized faculty development • Access to data dashboards on student success & equity gaps at the course level • Experience with student success data analytics, equity, Quality Matters Peer Review &Certification, OER, & assessment	• **Faculty Learning Communities** for inclusive teaching tools, equitable learning strategies, and integration of workplace skills • **STEM Summer Teaching Institutes** to examine systemic inequities in STEM course curriculum, employment, industry partnerships, and career pathways	• 50 FLC faculty portfolios (10/year) with evidence of implementation of inclusive teaching strategies and workplace skill development in 50 courses • Annual 1 week institute with 5 STEM & 5 consultation faculty/yr • 25 Teaching Institute faculty Portfolios	• Increased faculty knowledge & use of active learning, equitable assessments, accessible technology, & Open Educational Resources • Increased faculty knowledge of course equity gaps, & STEM workforce skills	• Increased use of active learning and inclusive teaching strategies • Increased use of low or no cost curricular materials • More standards based assessment than norm based grading • Increased STEM courses with learning outcomes aligned with employer needs More faculty working with employers	• Increased student access, engagement in STEM courses • Increase course pass rates and reduction of course level equity gaps
• Faculty research knowledge on Peer Led Team Learning, Inquiry Based Learning, and Service Learning • Internship network: Career Center, Community Engagement Center, Service Learning, NSM and ECS Student Success Centers • University relationships with local employers – Carlson Center & Anchor University	• **Course redesign for equity minigrants**– two year grants for STEM gateway courses; one year grants for data science	• Redesigned courses: Calc I & II, Physics 11A, Engr 30 & 124, Stat 1, DS101 with evidence based, data informed equity practices, reaching 2400 students /year • STEM courses with explicit workplace skill outcomes • Applied Data Science course (DS 101) and certificate pathways that align with employer needs and degree programs	• Implemented peer led learning, inquiry based instruction or Quality Matters course design • Students develop leadership, project management, and communication skills • Students connect to the STEM community • Faculty develop culturally responsive activity modules for redesigned courses • Faculty develop inclusive project based assessments and implement OER materials	• Increased pass rates and reduction of equity gaps in 5 gateway STEM courses and GE Stat 1 and DS 101 • Increased persistence of Hispanic and low-income students • Students develop a STEM identity • Increased number and diversity of students in Data Science courses • Faculty & student capacity to provide employers with applied Data Science services	• Increased number of Hispanic and low income students in STEM degrees • Reduction of STEM graduation equity gaps • Data Science degree and certificate pathways developed • More employers provide students with STEM internships • STEM faculty and students consult on STEM projects that serve local employers and community

40

2. STEM Student Support					
• Established and successful PAL program in NSM and ECS courses	• *Expand co-curricular PAL into BIO25, BIO 26, ENGR17, CSC20*	• *4 new 1 unit PAL courses, & worksheets* • *20 new PAL sections/yr serving 300 students*	• Improved student learning, confidence, self-efficacy, identity, and sense of belonging. • *Increase in course pass rates and narrowing equity gaps*	• *Students persist in sequenced STEM courses in their major* • STEM unit completion per semester increases for Hispanic & low income students	• Increased STEM degrees and removal of equity gaps for Hispanic & low income students
3. STEM Transfer Pathway					
• Transfer Pathway project design developed in collaboration with Sac City Community College and aligns w/ Compañeros Center • Established Through in Two peer coaching & articulation conferences • Established NSM transfer seminars and peer mentors • NSM and ECS Student Success Centers	• Review and update **2 year roadmaps** for STEM transfer degree attainment • Transfer **articulation conferences** for 1:1 learning between STEM faculty, advisors and student peer mentors • **Pre transfer STEM peer outreach** regarding upper division requirements, course expectations • **Referrals to connect students to peer programs, research, and internships**	• Road maps for 7 ECS and 10 NSM majors updated regularly and posted online • Transfer conferences; 2 x semester with local community colleges • Transfer Center STEM hub staffed with 2 faculty advisors and 3 peer ambassadors	• Sac State and Sac City faculty advisors understand developmental needs of transfer students, GE articulation and STEM major degree requirements • Pre transfer students understand transfer requirements, upper division course expectations and opportunities for support • 700+ STEM students interact with the Transfer Center annually	• Number of transfers engaged in opportunities that build community, research experience, STEM identity and internships/career advancement • Pre transfer and transfer students know what is expected of them to complete STEM degree programs. • Transfers students referred to STEM student support, research, leadership or internships	• Increased number of transfer students who persist in STEM • Increased STEM graduation rates and reduction or elimination of equity gaps
4.Integrated STEM Workforce Development					
• Established PAL Leadership Positions • Established STEM research (SIRIUS, SURE), Hornet Leadership (HLP), Service Learning, Entrepreneurship, and Internship programs	• **Workforce skills training** for PAL facilitators • Expand **paid internships** • **Referrals to research, leadership** and internships	• 60 PAL facilitators/yr participate in workforce skills training and microinternships • 8-10 students receive paid internships a year	• Students practice "soft" workforce skills - leadership, teamwork, problem solving skills, and written and verbal intercultural communication	• Students express confidence, self-efficacy, interest in completing STEM degree and pursuing STEM research, internships or career STEM employment	• Students are workforce ready and motivated to pursue STEM career or advanced degree pathways to professional STEM employment after graduation

Example of funded project LM 5 – Oxnard College/HSI STEM

Oxnard College Title III STEM GPS Project Logic Model & Rationale for the Project

Project Goals: Oxnard College's **STEM GPS project** will create an **Integrated Academic and Social Support System** to help guide Hispanic and other low-income students toward academic and career success in STEM under California's Guided Pathways framework. Project investments in career exploration and improvements to the quality STEM programs and services will increase enrollment, persistence, transfer, certificate, and degree completion in STEM by >5-10% over the project timeframe.

INPUTS & RESOURCES:
- Vision & Goals
- Title III Funding
- Project Staff
- Institutional Support
- Project Office, Equipment, Supplies
- K-12 & STEM Industry Collaborations
- Faculty Professional Learning
- STEM Instrumentation, equipment and technology

STRATEGIES & ACTIVITIES
- Targeted STEM academic advising & counseling**
- Integrated Academic & Social Support System**
- Faculty Professional Learning
- Peer Led Team Learning**
- Coaching/Mentoring.***
- Internships & Work based learning*

*Competitive Pref. Priority 1

**Competitive Pref. Priority 2

***Invitational Priority

SHORT-TERM OUTPUTS (1-3 Years):
- ✔ Create Integrated Academic and Social Support System
- ✔ Hire and train STEM Transfer & Careers Advisor
- ✔ Hire and train STEM Transfer and Career Exploration Specialist
- ✔ >300 K-12 students participate in STEM Career Exploration
- ✔ >200 OC STEM students participate in Career Exploration.
- ✔ >80 OC STEM students participate in WBL/internships.
- ✔ >50 faculty participate in Professional Learning.
- ✔ >25 OC STEM Faculty participate in STEM Industry KSA Exchanges

MID-TERM OUTPUTS (3-5 Years):
- ✔ >65% of OC STEM Faculty using equity-centered /active learning pedagogies.
- ✔ >100 STEM students per year meet with STEM Transfer Advisor
- ✔ >25 Peer Leaders earn CRLA Tutoring certification
- ✔ >25 Peer Mentors earn CLRA Mentoring Certification
- ✔ >49% O C STEM students retained.
- ✔ >40% OC STEM students transfer to 4-year postsecondary programs.

LONG TERM OUTCOMES (5-10 YEARS):
- ✔ > 15% increase in STEM certificates and degrees earned.
- ✔ > 10% of graduates have transferred to four-year degrees.
- ✔ OC uses equity as a criterion of success in STEM.
- ✔ OC Alumni securing "dream" STEM career role becomes the norm.
- ✔ OC Alumni contribute time, guidance, role modeling & mentoring.

ASSUMPTIONS & CONTEXTUAL FACTORS
- ✔ California Community Colleges implementing Guided Pathways and Equity Goals
- ✔ Focused STEM Transfer and Career Academic Advising will drive Hispanic and other low-income student success in STEM
- ✔ Customized Peer Led Team Learning (PLTL) academic instructional support supports transfer English & math success.
- ✔ Formative and Summative Evaluation support continual quality improvement.

**Model Program/Rationale: Doubling Graduation Rates: Three-Year Effects of CUNY's Accelerated Study in Associate Programs (ASAP) for Developmental Education Students. New York: MDRC.
http://www.mdrc.org/publication/
doubling-graduation-rates.
Meets What Works Clearinghouse's group design standards without reservation.
Theory of Change: The theory of change that guides the project is the "Cycle of Change" approach (Anderson & Anderson, 2002) .

Rubric for evaluating a logic model
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Logic Model Rubric

Organization: _____   Reviewer 1: _____   Reviewer 2: _____

Criterion	Exemplary – Approved	Acceptable – Approved	Needs Improvement – Rejected	Poor – Rejected	Rating	Comments
Overall Quality	• Includes *Goals, Inputs, Activities, Outputs,* and *Outcomes* with a significant number of items listed for each component making *Logic Model* comprehensive • Model is coherent. There are no gaps in the theory or reasoning across *Logic Model; Outputs* and *Outcomes* are linked logically to *Activities* and *Inputs* • Components are clearly written to align with the appropriate columns • Easily understandable with no jargon or technical language	• Includes *Goals, Inputs, Activities, Outputs,* and *Outcomes* with a sufficient number of items listed for each component making *Logic Model* complete • Few to no gaps in the theory or reasoning across the *Logic Model; Outputs* and *Outcomes* are linked logically to *Activities* • Components are all in the correct columns • Understandable with little jargon or technical language	• Missing at least one of *Goals, Inputs, Activities, Outputs,* and *Outcomes;* **OR** an insufficient number of items in each component making *Logic Model* unclear • Some gaps or a couple large gaps in the theory or reasoning across the *Logic Model; Outputs* and *Outcomes* marginally connected to *Activities* • Some components are in the incorrect columns • Some jargon or technical language that inhibits readability	• Missing at least one of *Goals, Inputs, Activities, Outputs,* and *Outcomes;* **AND** an insufficient number of items in each component making *Logic Model* unclear • Significant gaps in the theory or reasoning across the *Logic Model; Outputs* and *Outcomes* not connected to *Activities* • Many or most components are in the incorrect columns • Difficult to understand due to a significant amount of jargon or technical language		
Goals/ Objectives	• *Goals* of the project are specific, clearly stated, measurable, and align with the grant program's purpose • Clear how the *Logic Model* addresses the *Goals*	• *Goals* of the project are clearly stated, measurable, and align with the grant program's purpose • *Logic Model* addresses the *Goals*	• *Goals* are unclear, unmeasurable, or unaligned with the grant program's purpose • *Logic Model* does not clearly address the *Goals*	• *Goals* are not provided • *Logic Model* is unrelated to the *Goals*		
Inputs	• A wide range of *Inputs* is identified and includes research, financial support, and organizational/human capital • *Inputs* are sufficient to support the proposed *Activities*	• A variety of *Inputs* are identified and include research, financial support, or human capital • *Inputs* are likely able to support the proposed *Activities*	• A limited range of *Inputs* is identified • Not all *Activities* are clearly supported by identified *Inputs*	• *Inputs* are not clearly provided • *Inputs* are insufficient to support proposed *Activities*		
Activities	• Major *Activities* are included; they are clear and feasible • All *Activity* statements include an action word (e.g. Provide, Create, Implement) • All *Activities* are clearly and logically linked to the *Outputs* and *Outcomes* • At least one *Activity* is supported by at least a correlational study with statistical controls for selection bias	• Major *Activities* are included • Most *Activity* statements include an action word • *Activities* are related to *Outputs* or *Outcomes* • At least one Activity is supported by high-quality research findings or positive evaluation	• Some major *Activities* are missing • Few *Activity* statements include an action word • *Activities* are marginally related to *Outputs* or *Outcomes* • No high-quality evidence was provided to support the Activities	• Many or all major *Activities* are missing • *Activity* statements are all missing an action word • *Activities* are not linked to *Outputs* or *Outcomes* • Research on at least one Activity indicates negative effects		
Outputs	• Numerically based, with only products or services listed and no events or deliverables included • All are described in terms of treatment and include the target recipients (e.g., 50 students receive mentors; 20 teachers attend professional development)	• Numerically based, with mostly products or services listed and few events or deliverables included • Most are described in terms of treatment and include the target recipients	• Majority are numerically based, with some products or services listed and some events or deliverables included • Some are not described in terms of treatment or do not include the target recipients	• Majority or all are not numerically based, with many events or deliverables included • Many are not described in terms of treatment or are missing the target recipients		
Outcomes	• All are written as change statements (e.g., increase or decrease) and clearly describe beneficiaries (e.g., teachers, students, parents) of intended change • Clear progressive steps from short-term to long-term *Outcomes* • Most are achievable within the funding period and are within the scope of the project's control • Reasonable yet ambitious targets are provided for each *Outcome*	• All are written as change statements and clearly describe beneficiaries of intended change • Most long-term *Outcomes* clearly lead from short-term *Outcomes* • Most are achievable within the funding period and are mostly within the scope of the project's control • Reasonable targets are provided for each *Outcome*	• Some are not written as change statements or do not describe beneficiaries of intended change • Many long-term *Outcomes* do not clearly lead from short-term *Outcomes* • Many are not achievable within the funding period or are not within the scope of the project's control • Targets are provided for only some *Outcomes* or are unreasonable	• Direction of change is not clear or missing and beneficiaries of change are unclear for most *Outcomes* • No clear progression from short-term to long-term *Outcomes* • Many or all are not achievable within the funding period and are not within the scope of the project's control • Targets are missing or unreasonable for most or all *Outcomes*		

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Rubric for evaluating a logic model
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- **Key Terms**
  - **Goals:** are long-range intentions or purposes of the proposed project. Goals are what will be achieved when a project successfully addressed the problems or challenges that the grant program is meant to help overcome. Goals are likely to align with the federal grant program's purpose or absolutely priority(ies) the applicant met.

  - **Inputs:** are the raw materials needed to initiate the project, implement its activities, and attain the desired outputs and outcomes. Sometimes called resources, inputs include both tangible (such as curricula, instruction materials, facilities, and funding) and intangible items (such as time, community support, and specialized knowledge and skills.

- ## Key Terms Continued
  - **Activities:** are the processes, actions, and events through which the project resources achieve the intended outcomes; they are the steps in implementing a project. Examples include collaborating with partners, developing training or curriculum materials, conducting training sessions or workshops, and collecting and analyzing student performance data.

  - **Outputs**: are tangible, often process-oriented results or products typically expressed in numbers, such as number of students tested, number of teachers trained, and number of books read. While outputs provide information derived from the completion of project activities, they cannot indicate whether a change has occurred. For example, an output can tell you how many teachers attended training but not whether the training increased the teachers' knowledge of the training topic.

- ## Key Terms Continued
  - **Outcomes:** Short- and mid-term outcomes are the changes in project participants' knowledge, beliefs, and behaviors due to their involvement in the project. Outcomes can also be quick adjustments in organizational practices or system design. Short-term outcomes are observable almost immediately after participation,; mid-term outcomes can take month or years to emerge and typically build toward long-terms outcomes. Long-term outcomes, sometimes called impacts, are a program's lasting influences. Examples include higher student achievement schores, increased high school graduation rates, and grater college acceptance rates.

Source: Kekahio, W., Cicchinelli, L., Lawton, B., & Brandon, P. R. (2014). Logic models: A tool for effective program planning, collaboration, and monitoring. (REL 2014-025). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Pacific. Retrieved from http://ies.ed.gov/ncee/edlabs.

Additional Resources from OSEP

High-quality logic models drive project performance, evaluation, and improvement

- Part 1: Why Link the Evaluation Plan to a Logic Model? Video
- Part 2: Logic Models 101 – an Introduction to Logic Models Video
- Part 3: What Makes a Good Logic Model? Video
- Part 4: How to Link the Evaluation Plan to the Logic Model. Video
- Linking Expectations to Evaluations: Using your Logic Model to Create Your Evaluation Plan. Issue Brief
- Using a Logic Model to Build an Evaluation Plan Handout

Additional Resources from IES and University of Wisconsin

- [Guides and examples from the Regional Educational Laboratories (RELs)](#)

- [Article with built-in evaluation questions in the logic model](#) (REL Pacific)

- [REL Southwest additional resources](#)

- [ELM Application](#) (downloadable, browser-based application that will help you build a logic model by answering a series of questions)

- [Examples, templates, online course from UWI - Madison](#)

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