SEAP Estimated Price Report Requirements Guidance (EPRRG)

SEAP Logic Model (LM) (See *Appendix C: Technical Notes for Logic Model*)

Situation: NASA Education must work collaboratively on SEAP activities to support NASA Strategic Objective 2.4 and Federal STEM Education 5-Year Strategic Plan.

Priority: Efficiency and transparency among Mission Directorates, NASA Center Education Offices (including HQ and JPL); and the Headquarters Offices of Communications, Chief Scientist, Chief Technologist, Human Capital, Diversity and Equal Opportunity, Small Business, etc, through implementation of NASA Education business lines.

Planning	Implementation		Evaluation		
Inputs	**Activities**	**Participation (Outputs)**	**Initial Outcomes**	**Intermediate Outcomes**	**Long-Term Outcomes**
Education Directors at 10 NASA Centers and JPL to receive funding and administer activities NASA Visitor Centers HQ Offices of Education, Communications, Chief Engineer and Chief Scientist, etc. provide project guidelines, funding, and overall project management Content: ARMD HEOMD SMD STMD Business Line Logic Models/Business Line Directors Advisors: ECC Facilities	STEM Engagement provides opportunities for participatory and experiential learning activities in formal and informal education settings to connect learns to NASA-unique resources. Educator Professional Development uses NASA's missions, education resources, and unique facilities to provide high-quality STEM content and hands-on learning experiences to K-12, informal and pre-service educators. NASA Internships, Fellowships and Scholarships leverage NASA's unique missions and programs to enhance and increase the capability, diversity, and size of the Nation's future STEM workforce. Institutional Engagement increases STEM capabilities at formal and informal educational institutions and organizations by incorporating content based on NASA's missions.	Number of new or upgraded educational materials, products events, etc. based on NASA content/campaigns Number of participants in NASA Education-related events, may include tours, "special occasions or missions such as One-Year Crew" Number of new or enhanced STEM education offerings from or related to NASA STEM from collaborating Centers. Number of grants, cooperative agreements or Space Act Agreements from activity Other output data collected through evaluation and/or performance measurement	Evaluation data collected related to specific business line goals reported to Headquarters Delivery of authentic NASA STEM experiences from existing or potential visitors, students, faculty, families Collaboration among NASA or other Federal key personnel to share better practices, plan or execute the activity (e.g. quarterly telecons) Activities/Products comply with 508, Paperwork Reduction Act (PRA), Privacy Act, and other regulations.	Annual Performance Indicators (APIs) 2.4.1: Assure that students participating in NASA higher education projects are representative of the diversity of the Nation. 2.4.2: Continue to support STEM educators through the delivery of NASA education content and engagement in educator professional development opportunities. 2.4.4: Continue to provide opportunities for learners to engage in STEM education through NASA unique content provided to informal education institutions designed to inspire and educate the public. 2.4.5: Continue to provide opportunities for learners to engage in STEM education engagement activities that capitalize on NASA unique assets and content.	Objective 2.4: Advance NASA and the Nation's STEM education and work-force pipeline by working collaboratively with other agencies to engage students, teachers and faculty in NASA's missions and unique assets. CoSTEM Priority Goals: • Improve STEM Instruction Increase and Sustain Youth and Public Engagement in STEM • Enhance STEM Experience of Undergraduate Students • Better Serve Groups Historically Underrepresented in STEM Fields • Design Graduate Education for Tomorrow's STEM Workforce • Build New Models for Leveraging Assets and Expertise • Build and Use Evidence-Based Approaches

Assumptions
1) Respect for Agency and Center Priorities

External Factors
1) Appropriation Committee Reports
2) Forthcoming OIG Audit of NASA Education

Preparing and Submitting a Request for SEAP Funding: The Estimated Price Report Justification Narrative (EPRJN) and EPR Spreadsheet (EPRS)

I. Background and the Results of Beta Testing the EPRJN and EPRS

In FY 2012 NASA began restructuring its education related activities in order to streamline and maximize the opportunities it can offer within SEAP's allocated fiscal resources. As a result, many activities are being restructured or eliminated as they complete their natural period of performance. In FY 2015 some (not all) activities once funded by NASA Centers, Aeronautics Research Mission Directorate (ARMD) and Human Exploration and Operations Mission Directorate (HEOMD) are being internally consolidated within SEAP.

SEAP activities were selected through the Priorities Competition for SEAP. A key (non-exclusive) purpose of the competition was to assess effectiveness and prioritize for funding among the roughly 40 NASA activities reported by the Office of Education, ARMD, HEOMD, and select NASA Centers in the March 2014 Progress Report on Coordinating Federal Science, Technology, Engineering, and Mathematics Education. For a list of those activities, please see: Table 2: STEM Education Funding in Millions by Agency and Program at: https://www.whitehouse.gov/sites/default/files/microsites/ostp/STEM-ED_FY15_Final.pdf

During beta testing, some testers suggested that rather than calling SEAP EPR requirements "guidance" that the information be reorganized and revised to provide step-by-step instructions. Because every SEAP activity team will organize itself differently, step-by-step instructions are not practical or possible. Preparers may complete the requested information in the order that makes the most sense to their planning and collaboration efforts. It is also possible to complete some of the information in parallel rather than sequentially.

This EPR requirements guidance (EPRRG) is provided in a PDF file format because of problems encountered during document development and beta testing. PDF should ensure MAC and PC users are seeing the same content. Many preparers will not be able to edit in the EPRRG PDF file. The first page of this EPRRG, the SEAP Logic Model, is also provided as an editable Word file to prevent preparers from having to create an activity-specific logic model from scratch. The Word version of the SEAP Logic Model *contains no instructions*.

A trio of beta testers expressed their preference for the preparer responsibilities to be moved very close to the front of this EPRRG and for the descriptive sections to be deleted entirely, shortened, or moved to the back of the EPRRG. Since the majority of beta testers thought the amount of information originally provided was helpful, nothing was deleted. A couple of beta testers asked for a little more information about logic modelling and so *Appendix C: Technical Notes for Logic Model* was added.

Some beta testers also noted that tabs in the EPRS were not linked and that formulae should be added. Beta testers noted that the EPRS generally needed more technical notes and instructions. In particular, notes relating to estimating costs for the DLN, NETS and the types of personnel expected to deliver the SEAP activity and instructions on the order in which the EPRS tabs should be completed were requested. Prior to the EPRRG's reorganization and the addition of new information, beta testers reported on average one hour reviewing (no data entry) the three files provided, 1) a Word file of the SEAP Logic model, 2) the EPRRG and 3) the EPRS. The longest time a beta tester reportedly spent actively reviewing without any data entry was 120 minutes.

II. Preparer Responsibilities & FY 2015 and FY 2016 Target Due Date(s)

Applicants to the SEAP priorities competition, Center Education Directors or Mission Directorate Leads or their designees shall ***prepare the EPR spreadsheet and a justification narrative by working within NASA with 1) other Centers/MDs/JPL/Headquarters Offices and 2) the HQ Office of Education Infrastructure and/or Business Line Director(s)/Leader(s)*** to develop the following:

1) An EPR's activity-specific logic model (1-page). Preparer's may use the Word version of the SEAP logic model as a template and revise it as needed to reflect a particular SEAP activity. The SEAP logic model is the foundational accountability document that will be used to manage and account for the activity. Logic models are to be used by the activity manager(s)/leader(s) for 1) planning, 2) implementation, and 3) evaluation. Logic models will be shared among the other Centers, OMB, Congress and other stakeholders and may be published. The EPR's specific logic model rolls up to the overall SEAP logic model provided as the first page of this guidance. *See Appendix A: Sample Work-in-Progress-Adaptation EPRJN Logic Model* for a Sample Revisions-in-Progress-EPR-Specific Logic Model. Significant revisions to an activity's logic model after funding has been provided must be approved by SEA PD and the Evaluation Manager at HQ prior to implementation.

2) A short EPRJN that is an explanatory narrative (5-page count maximum, excluding a coversheet, table of contents, any appendices and the specific activity's logic model) that includes ***at minimum the following information*:**

- A short abstract suitable for publication on the NASA website (not to exceed 500 words). The abstract should identify the activity's approved name; activity's goals and to which NASA Education Line of Business and to which NASA Annual Performance Indicator(s) and Federal Priority Investment Area for STEM Education the activity contributes. The abstract should identify *at least two NASA representatives with their contact information for the activity*. The plan is to post abstracts as they are approved at: http://www.nasa.gov/offices/education/about/seap-overview.html. *See Appendix B: Revising an Abstract*.

- A short section that conceptualizes how the activity will meet SEAP evaluation requirements. Evaluation requirements are listed under the heading VI. Guidelines for Preparing for the Conduct of SEAP's External Evaluation Requirements in this document. At minimum, specify the process to be used to recruit an external evaluator. Note: If the primary purpose is to benefit the public, there may be aspects of the external evaluation that could be conducted via a grant or cooperative agreement.

- A timeline or milestone schedule for key or sub implementation activities including but not limited to target dates for obligations and the amounts. Preparers unable to estimate dates should use the letters TBD to indicate "To Be Determined" next to a particular milestone. Limitations and assumptions on appropriate implementation activities are outlined in **V. Guidelines and Assumptions that Support the EPRJN and EPRS.**

- Clarify and address any questions raised or revisions requested from the SEA PD and the selecting official in the June 2nd SEAP decision log. Prior to submission, preparers should: 1) make sure clarifications are satisfactory; and 2) contact the SEA PD to ensure there are no additional written or oral requests for clarification. Activities identified as potentially overlapping with the Space Grant (SG) and Minority University Research and Education Project (MUREP) must be cleared by the SG and MUREP Program/Project Directors. Synergy and integration with SG and MUREP-funded activities must be confirmed before an EPRJN/EPRS is submitted.

    - For MUREP contact: Joeletta Patrick: 202.358.2370 joeletta.o.patrick@nasa.gov

    - For SG contact: Lenell Allen: 202.358.1762 lenell.allen@nasa.gov

3) The Estimated Price Report Spreadsheet (EPRS): Separate, detailed instructions are provided within the EPRS. In brief, generally there is no need to repeat in the EPRJN the detailed information added to the EPRS. If the EPRJN does reference the EPRS, then provide a clear reference, e.g. tab name and row number within tab. Provide as much sub line-by-line detail as is currently available using the format within the SEAP-provided Excel file EPRS. If some information is not yet available, specify in the EPRS that the information is not yet available and use words to explain when more information or an estimate will become available. Additionally, if some items on the estimated price report are not applicable, then specify: Not applicable or N/A.

4) ***In sum, provide at least two editable files*** a) an EPRS in the SEAP-provided Excel Template and b) an EPRJN in Word via e-mail to: mary.f.sladek@nasa.gov, the SEA PD at HQ, with a copy to Diane Clayton, diane.clayton-1@nasa.gov, the lead Valador technical support contractor for the SEAP competition. The following are not deadlines and are provided to assist preparers set goals.

   Due Date: FY 2015 activities, which includes activities that have potential for both FY 2015 and FY 2016 funds, **no earlier than July 6, 2015.**

   Due Date: FY 2016 activities ***no earlier than 30 September 2015***.

   Preparers are encouraged to provide a third, summary file in PDF that combines the EPRS and EPRJN. This summary PDF file should help ensure that all EPRS and EPRJN content is legible.

III. How SEAP EPRS and EPRJN (EPRS&JN) Will be Reviewed/Used

No completed EPRS&JN can be submitted to the SEA PD at Headquarters that appropriate Business Line and/or OEID Director(s) / Leader(s) has not participated in developing, or lacking their active development, has approved post-development. EPRJNs relating to one or more Mission Directorate, Offices of Communications, Chief Scientist, Chief Technologist, etc., will be provided to MD ECC members to ensure that the requested funds do not conflict or overlap with MD or Office interests. If an MD or Office conflict is identified then revisions to the EPRS&JN will be requested or, in exceptional circumstances, the EPRS&JN preparers may be notified that the gravity of concerns expressed require consultation with the MD or office before a revision can be submitted for further review. Following MD or Office concurrence, the SEA PD will review EPRS&JN for completeness and clarity and consult with the Associate Administrator (AA) and Deputy AA (pending their timely availability) before releasing SEAP funding.

The review of a submitted EPRS&JN may be iterative and require written clarifications and revisions by the preparers. Final, funded EPRS&JNs will be made available on the NASA Education Community of Practice site located at: https://nen.nasa.gov/web/education. If FY 2015 or FY 2016 funds are no longer available by the time the EPRS&JNs are approved and finalized, then the AA will consider the use for future fiscal year funds. Finalized and funded EPRS&JNs are management accountability not proprietary documents.

IV. After EPRS&JN Approval Anticipated Activities, Implementation and Reporting

Regular communications through ViTs, phone, e-mail, and in-person meetings, if feasible, among the activity implementers is required, including when appropriate, submission of accomplishments to the Weekly Activity Reports (WAR).

Evaluation plans must be submitted for review and approval to the Headquarters Evaluation Manager prior to implementation. Draft evaluation reports also must be submitted for review and approval to the Headquarters Evaluation Manager prior to acceptance and finalization of a draft report by the activity leader/manager.

Short quarterly progress reports that identify 1) key staff involved; 2) products developed or anticipated; 3) activities undertaken; 4) activities planned for next quarter; 5) problems encountered; and 6) SEAP dollars obligated to date. Reports should be delivered via e-mail to the appropriate Office of Education Infrastructure and/or Business Line Director(s) / Leader(s):

Business Line Directors

Educator Professional Development (EPD)
Katie Wallace, Director EPD
katie.v.wallace@nasa.gov
256-617-1297

Institutional Engagement (IE)
Mary Sladek, IE Director, (Acting limited to the processing of SEAP funding only)
mary.f.sladek@nasa.gov
202-358-0861

NASA Internships, Fellowships and Scholarships (NIFS)
Carolyn Knowles, Director NIFS
carolyn.knowles-1@nasa.gov
202-358-2380

STEM Engagement (SE)
Diane DeTroye, Director SE
diane.d.detroye@nasa.gov
202-358-1069

Office of Education Infrastructure Division (OEID) Leaders
Since OEID is in a time of transition, please consult with both contacts listed.

Valarie Burks, Office of Education's Chief Information Officer
valarie.j.burks@nasa.gov
Phone: 202-358-3716
Cell: 202-450-7775

Patricia Shaffer, Evaluation Manager
patricia.a.shaffer@nasa.gov
Phone: 202-358-5230
Cell: 202-309-9163

V. Guidelines and Assumptions that Support the EPRS&JN

Adherence to the NASA FAR and the *NASA Grant and Cooperative Agreement Manual (GCAM) In Accordance with 2 CFR Part 200 (Implementation Date: December 26, 2014)* is mandatory. As a consequence and only in exceptional circumstances may funds be requested for new faux-WYE. An exceptional circumstance is typically the grandfathering of agreements awarded prior to January 2015. Requests for funds for a new faux-WYE must include documentation that a Center's Office of General Counsel and either the Center's Office of Procurement or the NASA Shared Services Center (NSSC) have approved the approach.

For SEAP, a faux-WYE is a member of the public who is funded on a cooperative agreement or grant and who serves at a NASA facility or center and who provides technical assistance that benefits NASA. A faux-WYE is not an individual who is funded on a cooperative agreement or grant and who does not serve at a NASA facility or center. *SEAP funds for grandfathered faux-WYE cooperative agreements, such as the cooperative agreement supporting internships, are permitted*. **Technical Note:** The term *faux-WYE* does not appear in the GCAM. This SEAP guidance uses the term to emphasize important distinctions between funding instruments and their proper use, particularly as outlined in GCAM's **Section 3.0 Choice of Award Instrument**. As stated in **Section 3.1 General**, "If the principal purpose of the funded activity is to provide something for the direct benefit or use of the Federal government, then a contract is the appropriate legal instrument to use. Grants and cooperative agreements, on the other hand, are considered a type of federal domestic assistance because they support or stimulate a public purpose." Download the GCAM at https://prod.nais.nasa.gov/pub/pub_library/srba/index.html.

Funds ARE to be OBLIGATED as soon as possible for:

- Planning and implementing the activity among NASA civil servants and contractors, including but not limited to NASA educators, web and other information technologists, scientists, engineers, and other professionals.

- Reusable multimedia or take-home materials that educate students, families, formal or informal educators, and the general public about NASA's STEM related missions. An example is 3-D eye goggles that learners use to visit the planets versus building a dark room with stars.

- FTE and WYE at the Center in support of Business Line(s).

- Support for DLN and NETS activities. At the time this guidance is being prepared, OEID is working to establish a base amount, if any, that may be provided without direct cost to support SEAP activities. For planning purposes, it necessary to contact NETS and DLN for a preliminary cost estimate that includes even de minis, or the insignificant costs, that preparers may have expected at no charge under past Office of Education Infrastructure Division practices. For a preliminary cost estimates the NETS contact is Jeff Ehmen at Marshall and the DLN contact is Gamaliel {Dan} Cherry at Langley. See the EPRS for their contact information.

- For cost planning purposes, preparers shall assume no centrally funded technical assistance for evaluation will be provided. Estimate planned costs for appropriate formative, process, or summative evaluation expertise from a third party evaluator. Costs for evaluation professional development or technical assistance for educating NASA Education civil servants and contractors is also within the scope of these funds

The following are examples of priority or target areas to consider when developing your SEAP-funded activities:

- Sustain and expand existing partners such as with 4-H, National Institute for Food and Agriculture, 21st Century Community Learning Centers, Department of Education and United States Department of Agriculture (pending). For more information about existing NASA Education partners and the forthcoming competitive announcement please contact Diane Clayton at diane.clayton-1@nasa.gov or 202-358-1582.

- Collaboration with all types of Federal agencies.

- Collaborate within NASA, particularly with the Office of Communications and the Office of Diversity and Equal Opportunity, for local, center-specific events; Headquarters, and/or agency-wide celebrations (such as Remembrance Day); NASA campaigns (such as Human Journey to Mars); other federal programs (such as Hispanic Heritage Month, Women's History Month, Black History Month, etc.); and special STEM-focused years or days (such as Earth Day). For collaborative activities to contribute to the STEM engagement business line and to NASA Education's APIs, supported activities require an identified education component beyond traditional outreach, NASA awareness or literacy events. *NASA Policy Directive (NPD) 1388.1 Employee Participation in NASA Education and Communications Activities* defines education and communications at NASA. The NPD established NASA's Offices of Communications and Education as the responsible offices to support and encourage employee participation in optional education and communications activities related to the Agency's mission as part of official duty activities. This includes NASA programs, projects, events, and activities that seek employee volunteers to engage, educate, or inspire audiences using technical or non-technical components of NASA's mission. This also includes select mission-related education and communications activities administered by NASA partners, collaborators, grantees, or other organizations." Download the full NPD via the NASA Online Directives Information System at: http://nodis3.gsfc.nasa.gov/displayDir.cfm?t=NPD&c=1388&s=1.

Limitations on Funds

- Funds shall not be used for the acquisition of large, basic infrastructure assets, such the purchase of land, construction of new facilities, vehicles, etc.

- Funds shall not be used to set up third-party alternatives to DLN- or NETS- provided services.

VI. Guidelines for Preparing for the Conduct of SEAP's External Evaluation Requirements

In addition to internal performance assessment, NASA Education also commissions external evaluation studies to build evidence and better integrate evidence into policy, budget, operational, and management decision-making. Program evaluation is defined by the Joint Committee on Standards for Educational Evaluations as "the systematic investigation of the merit, worth or effectiveness of a program, project, or supplementary curriculum material." NASA Education's program evaluation studies are systematic studies using research methods to assess the degree to which a portfolio, program, project, or activity (hereafter referred to as the evaluation subject) is effective and why. Typically effectiveness is determined in relation to the stated goals and objectives of the evaluation subject but other outcomes may also be identified and reported by the evaluator.

Formative, or process, evaluations assess the extent to which the evaluation subject is operating as was intended. It typically assesses program activities' conformance to statutory and regulatory requirements, program design, and professional standards or customer expectations with the intent to improve the project. At NASA, a formative evaluation study typically takes place during the first two to three years of a project or activity. Formative evaluation studies also may identify evidence-based practices in a number of project/activity sites and recommend options for programmatic change or subsequent evaluation.

Outcome evaluations address questions about the extent to which the portfolio/program/project achieved its results-oriented objectives. This form of evaluation focuses on examining outputs and outcomes but may also assess program processes to understand how those outcomes are produced. At NASA, outcome evaluations are

conducted on mature projects. Typically, projects are assessed to be mature after two or three years of project implementation. A mature project is a project with a high degree of fidelity of implementation, meaning that the project is implemented consistently and in a predictable way.

Dependent on the scale of the evaluation study, contractors conducting external evaluation services may be asked to conduct the following tasks:

- Development of evaluation questions;
- Development of rigorous evaluation plans appropriate to the questions posed, including randomized control trials and case studies. Data collection supporting the plan should collect the minimal amount of data necessary to generate statistically sound findings. Minimally, the plan should include the following sections:
    - Evaluation questions and the approach to responding to each question;
    - Evaluation design, with NASA's stated preference for a rigorous design (e.g., quasi-experimental study);
    - Description of the specific project activities that are the focus of the evaluation study and anticipated outcomes based on existing research evidence;
    - Sampling strategy;
    - Strategy for respondent recruitment (new data collection only);
    - Data collection methods;
    - Data analysis methods appropriate to responding to the evaluation questions (including non-response bias analysis);
    - Approach to informed consent/protection of human subjects, including IRB review;[1]
    - Design issues and risk mitigation strategy;
    - Data collection schedule and overall project timeline; and
    - Reporting, including a proposed table of contents for each major report deliverable.
- Facilitation of technical working groups to provide guidance to evaluation studies;
- Data collection, including:
    - Instrument/protocol identification and/or development;
    - Testing for reliability and validity of instruments developed by Contractor and field testing of administration protocols;[2]
    - Administration of data collection instruments and protocols, including survey and assessment administration, facilitation of focus group discussions and interviews, activity observations,

[1] The Contractor must ensure that data collection maintains the privacy of respondents to the extent provided by law, including the use of procedural and control measures to protect the data from unauthorized use. Please consult NASA regulations for human subjects research: NASA Policy Directives and Requirements
NPD 7100.8E, Protection of Human Research Subjects, NPR 7100.1, Protection of Human Research Subjects.

[2] Contractors are encouraged to identify existing valid and reliable instruments as an alternative to developing and testing instruments.

product review, project documentation review, site visits, and other professionally accepted and appropriate methods;

- Guidance and support for field-based data collection by grantees, awardees, and partners;
- Related activities, including preparation of transcripts and translation of data collection instruments;

- Data analysis, including rigorous qualitative analysis and descriptive and multivariate statistical analysis;
- Data reporting, including evaluation and performance-metrics reports, briefing presentations, and the transfer of de-identified datasets to NASA at the conclusion of the study.

When performing external evaluation services, the Contractor shall assume responsibility for the successful conduct of the entire evaluation study and maintain an arms-length relationship with the project/program under study. In addition, the Contractor serving as an external evaluator shall obtain all applicable clearances prior to commencement of data collection activities and remain in full compliance with the Privacy Act, the Paperwork Reduction Act, and other Federal and NASA regulations governing research and information collections.

Examples of external evaluation studies conducted for the NASA Office of Education can be found under the heading of NASA Education Performance Related Reports at:
http://www.nasa.gov/offices/education/performance/index.html.

VII. Selected Resources

In addition to preparing an EPRS&JN to address the NASA and Federal STEM Education Five-Year Strategic Plans, the following resource list in random, near alphabetical order includes URLS to some non-NASA policy, evaluation, performance and education research resources that preparers may find helpful:

Common Guidelines for Education Research and Development A Report from the Institute of Education Sciences, U.S. Department of Education and the National Science Foundation, August 2013
http://ies.ed.gov/pdf/CommonGuidelines.pdf

Designing Evaluations, Government Accountability Office, 2012
http://www.gao.gov/products/GAO-12-208G

Engage to Excel: Producing One Million Additional College Graduates with Degrees in Science, Technology, Engineering, and Mathematics
http://www.whitehouse.gov/sites/default/files/microsites/ostp/pcast-engage-to-excel-final_feb.pdf

Federal STEM Education 5-Year Strategic Plan
https://www.whitehouse.gov/sites/default/files/microsites/ostp/stem_stratplan_2013.pdf

Identifying and Supporting Productive STEM Programs in Out-of-School Settings
Committee on Successful Out-of-School STEM Learning; Board on Science Education; Division of Behavioral and Social Sciences and Education; National Research Council
http://www.nap.edu/catalog/21740/identifying-and-supporting-productive-stem-programs-in-out-of-school-settings?utm_source=NAP+Newsletter&utm_campaign=f127eb3ea5-NAP_mail_new_2015_06_30&utm_medium=email&utm_term=0_96101de015-f127eb3ea5-102125781&goal=0_96101de015-f127eb3ea5-102125781&mc_cid=f127eb3ea5&mc_eid=3a790e8169

NASA Strategic Plan 2014
http://www.nasa.gov/sites/default/files/files/FY2014_NASA_SP_508c.pdf

Performance Measurement and Evaluation: Definitions and Relationships Brochure, May 2011 (GAO-11-646SP) http://www.gao.gov/assets/80/77277.pdf

Prepare and Inspire: K-12 Science, Technology, Engineering, and Math (STEM) Education for America's Future http://www.whitehouse.gov/sites/default/files/microsites/ostp/pcast-stem-ed-final.pdf

Principal Investigator's Guide: Managing Evaluation in Informal STEM Education Projects, Center for Advancement of Informal Science Education, Association of Science Technology Centers, 2011
http://informalscience.org/documents/CAISEVSAPI_guide.pdf

Program Development and Logic Model Support
http://www.uwex.edu/ces/pdande/evaluation/evallogicmodel.html

Progress Report on Coordinating Federal Science, Technology, Engineering, and Mathematics (STEM) Education (March 2015)
https://www.whitehouse.gov/sites/default/files/microsites/ostp/stem_ed_budget_supplement_fy16-march-2015.pdf

STEM Education Section of the OMB-OSTP Science and Technology Budget Priorities Memorandum FY 2015
https://www.whitehouse.gov/sites/default/files/microsites/ostp/fy_15_memo_m-13-16.pdf

STEM Education Section of the OMB-OSTP Science and Technology Budget Priorities Memorandum FY 2016
https://www.whitehouse.gov/sites/default/files/microsites/ostp/m-14-11.pdf

Acknowledgments
Logic Model Prepared by
Mary F. Sladek, OE/HQ
With assistance from
Patricia Shaffer
Diane Clayton (Valador)

The SEAP Estimated Price Report Requirements Guidance (EPRRG) and EPR Spreadsheet (EPRS) were developed in consultation with these beta-testers:
Valarie Burks, Office of Education's Chief Information Officer
Bryan Dansberry, Johnson Space Center
Darla Jones Kimbro, (Valador)
Carolyn Knowles, Office of Education
Rob LaSalvia, Glenn Research Center
Frank Prochaska, Johnson Space Center
Tammy Rowan, Marshall Space Flight Center
Karla Shy, Armstrong Flight Research Center
Shaun Smith, Armstrong Flight Research Center

Appendix A: Sample Work-in-Progress-Adaptation EPRJN Logic Model: Name of Activity: NASA Aeronautics Scholarships and Other Advanced STEM Training and Research Fellowships (NAS&OASTARF) On this page blue/violet/or purple text color is used to indicate examples of LM edits. Strikethrough is the step before deletion and indicates text proposed for deletion in this in-progress LM. Do not show strike through in a final LM.

Situation: NASA's Education must work collaboratively to implement graduate fellowships that ARMD and TBD <Sample unresolved issue: Is SMD is in or out?> not duplicating STMD investments or practices. Note: Red-hued text indicates an EPRJN's logic model's mandatory elements.

Priority: Efficiency and transparency among Mission Directorates, NASA Center Education Offices (including HQ and JPL); and the Headquarters Offices of Communications, Chief Scientist, Chief Technologist, Human Capital, Diversity and Equal Opportunity, Small Business, etc, through implementation of NASA Education business lines.

Planning | Implementation | Evaluation

Inputs	Activities	Participation (Outputs)	Initial Outcomes	Intermediate Outcomes	Long-Term Outcomes
Education Directors at 10 NASA Centers and JPL to receive funding and administer activities NASA Visitor Centers HQ Offices of Education, Communications, Chief Engineer and Chief Scientist, etc. provide project guidelines, funding, and overall project management Content: ARMD HEOMD SMD STMD Business Line Logic Models/Business Line Directors Advisors ECC Facilities	NASA Internships and Fellowships ~~and Scholarships~~ that leverage NASA's unique missions and programs enhance and increase the capability, diversity, and size of the Nation's future STEM workforce. Establishment and implementation of an evaluation plan. Participate in the IWG for graduate Education. Continue to Collaborate with MUREP's EONS.	~~Number of new or upgraded educational materials, products events, etc. based on NASA content/campaigns~~ Number of participants in NASA Education-related events, may include tours, "special occasions or missions such as One-Year Crew" ~~Number of new or enhanced STEM education offerings from or related to NASA STEM from collaborating Centers.~~ Number of grants, cooperative agreements or Space Act Agreements from activity Performance Measurement Data in OEPM	Evaluation data collected related to specific business line goals reported to Headquarters Collaboration among NASA or other Federal key personnel to share better practices, plan or execute the activity (e.g. quarterly telecons) Activities/Products comply with 508, Paperwork Reduction Act (PRA) privacy and other regulations.	Annual Performance Indicators (APIs) 2.4.1: Assure that students participating in NASA higher education projects are representative of the diversity of the Nation. ~~2.4.2: Continue to support STEM educators through the delivery of NASA education content and engagement in educator professional development opportunities.~~ ~~2.4.4: Continue to provide opportunities for learners to engage in STEM education through NASA unique content provided to informal education institutions designed to inspire and educate the public.~~ 2.4.5: Continue to provide opportunities for learners to engage in STEM education engagement activities that capitalize on NASA unique assets and content.	Objective 2.4: Advance NASA and the Nation's STEM education and work-force pipeline by working collaboratively with other agencies to engage students, teachers and faculty in NASA's missions and unique assets. CoSTEM Priority Goals: • ~~Improve STEM Instruction Increase and Sustain Youth and Public Engagement in STEM~~ • ~~Enhance STEM Experience of Undergraduate Students~~ • ~~Better Serve Groups Historically Underrepresented in STEM Fields~~ • Design Graduate Education for Tomorrow's STEM Workforce • Build New Models for Leveraging Assets and Expertise • Build and Use Evidence-Based Approaches

Assumptions

External Factors: Public Law for AeroScholarships

Appendix B: Revising an Abstract

Sample Inputs: Application Abstracts

NASA OUT-OF-SCHOOL TIME (OST) STEM LEARNING NETWORK_6500000_24 The GRC Office of Education (OE) proposes to collaborate with NASA Centers to establish a NASA OST STEM Learning (NOSL) Network to engage students in STEM content in summer and afterschool programs with an emphasis on Youth Serving Organizations (YSOs). The purpose of the NOSL Network is to offer projectbased STEM learning experiences that connect NASA scientists, engineers and mission content with OST programs to effectively implement evidence-based programming. The GRC OE will manage the NOSL Network providing direction, internal call for proposals, evaluation and tracking of the funds. Each NASA Center will serve as a NOSL Network Hub offering a regional support strategy that promotes the implementation of evidence-based practices through; •Professional development • Place-based learning opportunities • Access to scientist and engineers • Connections to Space Grant, regional and national OSTs and partner led learning networks including but not limited to: o U.S. Department of Education 21st Century Community Learning Center program o Battelle STEM Learning Network oNational Institute on OST o Afterschool Alliance o National Summer Learning Association • Evaluation technical assistance • Standards-based model lessons Although the NOSL Network is a new effort, it will build upon evidence-based practices, lessons learned, and evaluation results from the implementation of the Summer of Innovation (SoI) project.	**ASTRO CAMP Estimated Dollars $1, 500,000.00 Approximately 36 months Stennis Space Center, Johnson Space Center, Kennedy Space Center, Marshall Space Flight Center, Infinity Science Center International Space Station, Space Launch System(SLS), Human Research Program** ASTRO CAMP began at NASA Stennis Space Center (SSC) in 1990 with two week-long camps supported by a small group of educators and counselors. SSC has successfully used Astro Camp to partner with the military, academia, and informal partners to scale its activities. It has used its existing curriculum to provide train-the-trainer sessions to informal and formal educators to conduct camps at their own sites. In addition, Astro Camp has participated in many outreach activities to more effectively reach target groups (e.g., Girl Scouts, Science and Engineering Festival) and to enhance student and educator awareness of NASA missions. Through this request SSC hopes to expand activities to other HEO affiliated NASA Centers and Partners (i.e.. Visitor Centers, Space Grant, Museum Alliance) using the train-the trainer model. Astro Camp's primary focus is on improving STEM literacy and career focus for K-12 students, pre-service, and in-service teachers. Staff members include both in-service and preservice teachers. All Astro Camp activities are hands-on, inquiry-based, and teach science and technology skills. Even the youngest students are introduced to engineering, robotics, and computer programming. In addition, all activities utilize NASA unique resources (test stands, NASA scientists and engineers, NASA missions). All Astro Camp activities are designed to meet national science, technology, engineering and math (STEM) standards. Camp staff present math and science principles through NASA STEM unique hands-on activities, teaching teams of campers to work together to complete missions.	**STEM TOUCH TEN_Estimated Dollars 911700_ Approximately 36 Months** NASA LaRC will partner with Virginia Air & Space Center (VASC) to produce a comprehensive, three-year STEM TOUCH TEN (STT) program to engage and evaluate 1,000 students in NASA-inspired, STEM-rich educational experiences. STT will track third grade students for three years, through fifth grade. Each year STT students will participate in TEN separate STEM programs and engagements, equaling 30,000 exposures, to include multiple outreach programs, and two museum visits, capping off with a STT Family Engagement Space Day museum visit. Additional family experiences will be provided through the Student STEM Ambassador Program. VASC will partner with approximately ten of the region's public and private schools to expose students to multiple forms of programming featuring NASA-inspired STEM content focusing on space, aviation and robotics. Each school will visit the museum twice during the school year: in the fall for a STEM program, scavenger hunt, and IMAX film; and in the spring to participate in NASA activities for family Space Day. Each school will also experience eight outreach programs, including seven classroom-style programs and one assembly-style program. All VASC programs are designed to meet Virginia Standards of Learning (SOL) guidelines. To enhance and aid student educational museum experiences, students will visit the new NASA Robotics STEM Laboratory, utilizing programs like Robotix, Makey Makey, Little Bits, LEGO Mindstorms, and 3D printers. Students may build and program robots to learn hands-on engineering. This Robotics STEM program will feature prominently in both museum visits. Evaluations will be used to assess VASC's programs. Students will be given pre- and post-surveys to gauge changes in their interest in STEM. Participating students will be enrolled in a yearly VASC Student STEM Ambassador Program, providing additional access to the VASC anytime, and including monthly STEM activities.

Process: Submitters, BLD(s), SEA PD and other key stakeholders collaborate/communicate to find synergies, establish roles/responsibilities, and create new abstract.

Proposed Collaborative Title: **Astro Camp and NASA Out-of-School Learning (AC&NOSL) Pilot. Total Estimated Dollars: $2,590,000. Approximately 36 months. Glenn Research Center, Stennis Space Center, Johnson Space Center, Kennedy Space Center, Marshall Space Flight Center, Infinity Science Center, International Space Station, Space Launch System, Human Research Program, Langley Research Center, and Virginia Air & Space Center.** Research from the Framework Institute and some NSF-funded research shows that fluency in STEM is achieved through in- and out-of-school learning. NASA Glenn's leadership of the Summer of Innovation (SOI) pilot 2008-2014 (check dates) under the Administration's Educate to Innovate Campaign produced a quality evaluation and evidence-based education practices related to delivery of NASA-content-based challenges and other activities. A key goal of the AC&OSL pilot is to improve evaluation of Astro Camp and the delivery of NASA STEM content by NASA Centers' and their Visitor Centers. <Submitters will develop more content for this abstract and Insert POC(s)

Appendix C: Technical Notes for Logic Model

I. The Situation: The NASA Strategic Plan 2.4 Objective and 5-Year Plan

SEAP contributes to a key objective of NASA's 2014 Strategic Plan: *Objective 2.4: Advance the Nation's STEM education and workforce pipeline by working collaboratively with other agencies to engage students, teachers, and faculty in NASA's missions and unique assets.* SEAP activities align with Federal STEM Education 5-Year Strategic Plan.

II. The SEAP Logic Model (LM)

The SEAP logic model presented in this EPRRG provides the overall picture for how the funding for SEAP priorities will be implemented. The overall logic model is controlled by the SEA Program Director and Evaluation Manger at HQ.

III. Inputs

The term *input* refers to the resources, contributions, and investments that go into the particular SEAP-priority.

IV. Activities

The term *activities* refers to specific processes, procedures or actions supported by one or more NASA education business line(s) intended to stimulate learning. Preparers who are unsure what is or is not an eligible logic model activity should consult one or more business line director. An activity-level LM must identify, within the general business line category, the actual type activities proposed for investment, such as but not limited to, Challenges for STEM Engagement (SE), face-to-face or on-line for Educator Professional Development (EPD), or a NASA Research Announcement or Cooperative Agreement Notice for Institutional Engagement (IE).

V. Outputs

The term *output* refers to the services, events, products, etc. that reach people who participate or who are targeted.

VI. Outcomes

The term *outcomes* refers to results or changes for individuals, groups, communities, organizations, communities, or systems

VII. Assumptions

The term *assumptions* refers to the beliefs the SEAP activity, the people involved, and the context and the way prepares think the SEAP activity will work

VIII. External Factors

The phrase *external factors* refers to the environment, i.e., the political, social and cultural conditions affecting why the priority exists that interact with and influence SEAP actions.

Sources

These LM technical notes are adapted from two on-line resources that were downloaded 29 June 2015.
University of Wisconsin http://www.uwex.edu/ces/pdande/evaluation/evallogicmodel.html
American Heritage Dictionary of the English Language:
https://www.ahdictionary.com/word/search.html?q=&submit.x=43&submit.y=27