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Brian L. Mitchell
Director

PUBLIC MEETING MINUTES

Name of Organization: Informal STEM Learning Environments (ISLE) Subcommittee

Date and Time of Meeting: Tuesday, May 18, 2021 at 3:00 pm

Place of Meeting: Per the Declaration of Emergency Directive 006 Section 1, the requirement contained in NRS 241.023(1)(b) that there be a physical location designated for meetings of public bodies where members of the public are permitted to attend and participate is suspended.

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Passcode: 778034

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1. Call to Order / Roll Call

Tracey Howard

Informal STEM Learning Environments (ISLE) subcommittee was called to order by Tracey Howard at 3:00 P.M. on May 18, 2021, at the above meeting. She will be running the meeting today.

Members Present

Aaron Leifheit
Caitlin Aitchison
Kristoffer Carroll
Judy Kraus
Nancy Maldonado
Sean Hill

Staff Present

Tracey Howard
Brian Mitchell
Debra Petrelli

Guests Present

None

Members Absent

Amy Page
Craig Rosen
Mauricia Baca

A quorum was declared.

2. **Public Comment** (No action may be taken upon a matter raised under public comment period unless the matter itself has been specifically included on an agenda as an action item.)
Tracey Howard

There were no public comments.

3. **Welcoming Remarks and Announcements** (For information only)
Tracey Howard

Mrs. Howard welcomed everyone and suggested they get right to work on the draft overview tool she is presenting.

4. **Approval of the Minutes from the February 17, 2021 ISLE Subcommittee Meeting** (For possible action)
Tracey Howard

Mrs. Howard asked if there are any changes or corrections to the February 17, 2021 Minutes as written. Mr. Hill commented that on page 3, second paragraph, 12 lines down, it should read "...that *internally* allows." No other corrections were discussed. Mrs. Howard asked for a motion. Mr. Hill made a motion to approve the February 17, 2021 Minutes to include the correction above mentioned. Ms. Maldonado seconded the motion. The motion passed unanimously.

5. **Discussion on the Informal STEM Program Evaluation Overview Tool** (For possible action)
Tracey Howard

Mrs. Howard referred the group to the evaluation overview tool on the screen (a flowchart document with navigational boxes with connecting arrows to each level). She said she is hoping that by walking everyone through it and giving background on the way it is structured the group can provide any changes, comments, and/or ideas to complete it. She requested feedback from everyone. She explained that this tool is basically a flowchart beginning with the question of whether it can help an informal STEM program or organization that is interested in evaluation. She said at this point the program or organization can chose whether they are interested in an evaluation or not, and if not, reasons are given why they should evaluate. She added it was suggested at the last ISLE meeting the individual boxes contain a link to research on each topic.

Mrs. Howard suggested the first tier of boxes should ask the question of what stage a program is at, i.e., idea stage, new stage, established stage. She added from this point it can be determined what to evaluate, i.e., STEM ecosystem for needs and existing assets, individual initiative or activity within a larger program, or ongoing progress toward program or organization goals. She said the next level would ask what or who the program or organization wants to evaluate, i.e., participants, the program itself, or impact on the local STEM ecosystem. Below that level, she pointed out, there would be boxes to identify the specifics, i.e., participant STEM knowledge and skills before and/or after the program, participant engagement or re-engagement in the program, participant's STEM identify before

and/or after the program, the program's STEM content, the programs STEM pedagogy, the program's ability to respond to participant interests, experiences, and cultural practices, the connection between the program and participant success, the program's alignment to local workforce needs, and stakeholder engagement and representation in the program design. She added she still has an ongoing list of items that are missing from this draft document.

Mr. Carroll asked whether the intent would be that some of the boxes become clickable links to other resources. Mrs. Howard replied that yes, as requested at the last meeting, users will have clickable links to supply additional research information, overviews, tips, additional links, etc. Mr. Leifheit said he appreciates that it gives real concrete categories right at the beginning according to where a program is at. He asked whether there have been discussions on something that specifically measures a program from the State Strategic Plan or at the State level, perhaps in the "*Specifically*" row, in which things considered common denominators across the entire state could be included like a rubric or framework that programs could use as a resource. Mrs. Howard gave an example of a project currently being worked on by a committee of the Regional STEM Networks, which is a high-quality STEM rubric. She said out-of-school programs could use that framework as a self-assessment of different attributes of a high-quality STEM program by asking themselves how they are doing regarding each of the attributes.

Mr. Carroll asked whether, in this structure, the information sitting on this one page would only contain clickable links or whether it could be more website-based using buttons, so when a button is clicked the next set of criteria unfolds. He said, with the latter, each selection could have a different result. He referred to the top line, "*Where my program is,*" and said where a program currently sits is a degree of establishment, but that question could also be phrased in terms of the type or category, i.e., during school day versus after school day or, intended for kids versus intended for adults. He added there is a lot of variability at that level of the flowchart by having two factors to choose from that guides the user to the correct next level.

Mr. Hill said it needs to be decided what the level of assistance this tool will provide. He said it is interesting having different categories of informal STEM providers and does see the value of showing a list of who should be using this guide. On the other hand, he pointed out, if someone is doing an informal STEM program, they most likely know they are doing an informal STEM program. He added it needs to be addressed whether some questions on this tool are going too far. Mr. Carroll said in terms of how a program is evaluated, it may be based on where the program exists within that ecosystem and not necessarily how long it has existed in that ecosystem, which are both important features of the first question, "*What my program is.*"

Mr. Mitchell discussed the visual aspect of the flowchart and the question of whether everything should fit on one page or be better to have a guided process where an initial level is presented and when an item is clicked it takes the user to the next level. He added that the result should ultimately be a tool that will be useful, user friendly and not annoying. He said he envisions a tool in which the user clicks on their choice and it takes them to the next option and so forth until it leads them to the resources required for that particular program with an option to go back to the start if they get lost along the way.

Ms. Aitchison suggested the user be able to either click through the process and make choices as they go to find resources, but also give the user the ability to see the big holistic picture with an option at the end linking the entire list of resources from choices that could be made through the process. She said this would ultimately help make the tool more user friendly by allowing full access to all options without going back to the start of the program. Mrs. Howard agreed this would be helpful, especially with programs just starting out by seeing the full array of options.

Mr. Carroll asked if a need could be seen for future proofing of adding other resources in multiple buckets of the “*Specifically*” category. He asked whether a tool would be useful for multiple reasons for different groups within the program structure. He said to him that means it is set up as selectable and goes down a pathway, possibly having those resources organized numerically to view sequentially. Mr. Mitchell agreed there could be resources that end up in multiple buckets and what the right way to display that is to perhaps give users the option of the “guided tour” versus “the mountain top view” from the very beginning. Mr. Carroll said by leveraging the expertise of this group and the work collectively studied for these standards, a program or organization with a long-established program might also want to pay attention to the suggested sequence of tools and pointed out that specifically the sequence is extremely helpful for a program just entering this phase.

Mrs. Howard said her hope is to dig into this flowchart with more discussion from this subcommittee, the experts on the subject, then going through level by level and ask the questions of, “What did I need to evaluate at this point” and “What would I have liked more information on that was missing.” She said regarding “Program Type,” she believes more discussion is needed on how that might impact the evaluation and suggested that item be tabled at this time for more discussion at the next meeting. She added it may not even impact where the rest of the flowchart goes and for that reason, she will revisit her notes and the groups input and present it again at the next meeting. She added that a lot of great ideas have been discussed on the formatting piece and after more discussion today, more will be known about what that piece will look like.

Mrs. Howard referred the group to the second level of the flowchart, “*I should.*” Mr. Hill asked whether there will be links associated with the first box titled “*Evaluate the STEM ecosystem for needs and existing assets,*” which would provide resources like a community needs evaluation. Mrs. Howard suggested that one possible link could be the asset map the Regional STEM Network’s committee is currently working on. Mr. Hill said the flowchart starts off good by asking, “*Are you are fulfilling a need?*” He said this is a good opportunity to get those new program design folks to think about other program evaluation topics as well. He added this is also a critical time to be thinking about the long-term impacts for a program. He asked how to get a program that is still in the idea stage to understand it is critically important that after a needs-assessment is completed, they think about program evaluation even before a program is started. He suggested adding arrows to “*Program*” and “*Participants,*” or possibly adding one of the resources mentioned that keys into that idea. Mrs. Howard agreed and said if not arrows possibly just adding in the verbiage, “Next, consider long-term goals regarding participants and programs.”

Mrs. Howard asked whether there was anything else that could be included around evaluation for newer programs to consider. Mr. Carroll asked whether this is the time to think about the

intended audience. Mr. Hill said if a needs assessment is done, he believes a valuable guide for programs in their early stages would be the link under "*The Program...*" titled "*My program's ability to respond to participant interests, experience and cultural practices,*" as well as the program asking those communities what is needed. Mr. Carroll agreed and said many people wanting to start a program do not pay attention to the community they are trying to impact and recognize they may not have the same outline version of what is necessary.

Ms. Maldonado asked who would have access to this tool. She pointed out from comments today, it sounds like this tool may be used as a gateway for new ideas coming out, or programs trying to determine where they fit into the STEM network or informal STEM community. She asked whether this tool is designed for evaluation purposes, or whether these goals are being combined. Mrs. Howard pointed out the process that brought ISLE to this juncture was shared at the last ISLE meeting. She said it included past years data from this subcommittee which included informal STEM program surveys asking what support those programs most needed. She pointed out that "Evaluation" was a big topic in those surveys. She said this tool would be for informal programs interested in evaluation but who are not quite sure either what to evaluate or how to evaluate, as well as what evaluations could be used.

Mrs. Howard said when a new program is in the beginning stages and just starting to consider different attributes like an audience or what their program will entail, it is easy to get off the evaluation topic. To assist them to stay on topic and if they have questions about how to evaluate, she suggested providing a link to a short overview or adding verbiage to the flowchart, i.e., "As you are designing your program, here are some things to consider..." or perhaps down the line, "This is what you can consider in terms of evaluation..." or "This is some information you will want to start collecting..." She pointed out it is important how this tool is framed for those early programs. Mr. Mitchell said, in the past when OSIT has offered grant funding for pilot STEM programs, the application asks how they will evaluate the program. He said, generally, when those applications are reviewed it has been found with most applicants, including well-established programs starting a new pilot program, they are weak in that area. He said by added a tool like this, it could be very useful when a program is seeking grant funding, and not only for funding from the State but also from any entity including private funding.

Mrs. Howard suggested for new programs it appears there is a need to add in information about how to begin thinking about evaluations during program design. She said a separate navigation box could be added, titled "*How to think about evaluation during program design,*" and link it to "*Evaluate the STEM ecosystem for needs and existing assets.*" She pointed out the first link could take the reader to information on the different components they should start evaluating right away with possible tips on how to put together an ongoing evaluation. Mr. Hill pointed out it would be helpful and is innovative thinking for a startup program to be thinking about program evaluation early in the process, which makes this a very helpful tool.

Mrs. Howard, addressing the flowchart box, "*Evaluate an individual initiative or activity within my larger program,*" and its connected boxes, "*Participants,*" (i.e., engagement, success); and "*The Program*" (i.e., pedagogy content, standards of alignment), said it could

also point to all three selections under “*My program is...*” She added that she arrived at the topics on this draft tool from the groups’ research and resources shared with her. She welcomed any changes or additions to this tool from members of ISLE, the experts on this subject.

Mr. Hill said in looking at the “*Participants*” box and comparing to his organization’s evaluations he notes items not represented, or topics he would be interested in evaluating specific to his program. He suggested perhaps adding a “*Program Specific*” box with a variety of more specific topics. Mr. Leifheit suggested that other entities besides organizations might also require a program-specific choice not on this list. He said years ago it was discussed getting every informal STEM provider across the state to evaluate the same few topics. He said by having only a limited number of choices across the whole field of informal STEM, it could help make this document simpler with the data required by making it more standardized across the entire state.

Mr. Carroll said regarding the box, “*I want to evaluate,*” it could mean shifts in participant attitude. He added that in terms of STEM, identity and interest are extremely valuable, almost precursors to motivation. He suggested those are things you may want to pursue in terms of evaluation, as they are gateways. He added he is struggling with the box “*Participants*” and what the label should be. Mr. Leifheit said he would expect there are lots of participant-specific outlets you would want. He said verbiage could be added that might encourage someone starting a new program to basically evaluate a measure of their STEM strategic plan, then connect their evaluation to it.

Mr. Carroll asked whether it is more beneficial to leave the boxes as they are. He said by leaving “*Participants*” and its categories as is, it may become dependent on certain types of funding or long-range goals versus short-term goals. Mr. Mitchell said he believes there are some things important to measure no matter who you are or what your program is. He pointed out there are some things that are organizational-specific, and some organizations have never really thought about what those things are they should be measuring. He said perhaps a good tool would be one this group comes up with asking a series of reflection questions and giving assistance to that organization by helping them think through what a common measure would be. He said, in his opinion, he believes the box “*Organizational Specific Attributes*” would go back under “*Impact on Participants.*”

Mrs. Howard said in discussing program specific attributes, she is reminded of the program’s alignment or the program’s progress towards its vision and mission, and depending on what that vision and mission is, a program would want to evaluate that. She asked whether the group thought the progress towards the mission and vision of a program and a programs’ specific attributes are the same. Mr. Hill suggested melding the two, as they are similar ideas. Mr. Leifheit said he believes it depends on what level of detail should be included and the ease of following the rubric. He said he believes they want to be helpful but keep this tool (flowchart) to one page.

6. Discussion on the Informal STEM Program Evaluation Toolkit (For possible action)
Tracey Howard

Mrs. Howard said regarding the evaluation toolkit, and in looking forward, she is interested in getting some of the work done around actual resources, or tools and links that can be added in on the lower portion of the flowchart under the “*Specifically...*” category. She said she would like to work one-on-one together with each member of this group to achieve this goal. She said to do this efficiently, she would just go through all the boxes under “*Specifically*” and assign each member who is interested in the subject to work on the necessary resources, tools, and links for each. She said after that she can reach out separately to each member and discuss those lists of resources. She will then go back and compile the information for discussion at the next meeting. She proceeded to assign each topic with one or more members. Mr. Carroll pointed out there is a new faculty member at UNLV recently brought on, Dr. Katie Wade-Jaimes, who has been looking specifically at “Interest in Identity,” in terms of engineering student populations, which may be an interesting connection for this item. He said he would send contact information to Mrs. Howard to connect with that person. She said as a next step, she would reach out to each member and schedule a time to discuss their assigned link.

7. ISLE Subcommittee Member General Announcements (For information only)
Tracey Howard

There were no general announcements.

8. Consider Future Agenda Items for the Next Meeting (For possible action)
Tracey Howard

Mrs. Howard suggested the following agenda items for the next ISLE meeting:

- 1) Further discussion on the Evaluation Overview “Program Type,” and
- 2) A discussion on the STEM Program Evaluation Toolkit and the information put together from upcoming one-on-one meetings with members on the necessary resources, tools, and links to complete that portion of the flowchart titled “*Specifically.*”

9. Public Comment (No action may be taken upon a matter raised under public comment period unless the matter itself has been specifically included on an agenda as an action item.)
Tracey Howard

There were no public comments.

10. Adjournment
Tracey Howard

Mrs. Howard adjourned the meeting at 4:00 pm.