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MINUTES

Name of Organization: **Informal STEM Learning Environments Subcommittee**
of the Science, Technology, Engineering and Mathematics
(STEM) Advisory Council

Date and Time of Meeting: **Tuesday, May 9, 2017, 9:00 a.m.**

Place(s) of Meeting: Desert Research Institute (DRI)
Room Rogers 352
755 E. Flamingo Rd
Las Vegas, NV 89119

OR

Governor's Office of Science Innovation and
Technology (OSIT)
100 North Stewart Street, Suite 220
Carson City, NV 89701

Please use the following numbers to join the conference call:

North: 775-687-0999 or
South: 702-486-5260

Access Code: 70987 push #

- I. Call to Order/Roll Call
Aaron Leifheit – Co-Chair
Amy Page – Co-Chair

Co-Chair Leifheit called the meeting to order at 9:02 a.m.

Members Present: Aaron Leifheit; Amy Page, Andy Hart, Kris Carroll, Sean Hill, Camille Stegman, and Jessica Snaman

Members Excused: Craig Rosen, Judy Kraus

Staff Present: Brian Mitchell, Debra Petrelli

- II. **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.)

There was no public comment.

- III. **Welcoming Remarks**
Aaron Leifheit, Co-Chair
Amy Page, Co-Chair

Co-Chair Leifheit welcomed everyone and had members introduce themselves. He stated he is the Education Director of a non-profit, Outside Las Vegas Foundation. Co-Chair Amy Page introduced herself; she is with the Las Vegas Natural History Museum. Kris Carroll introduced himself; he is a K-12 Regional Science Trainer with the Regional Professional Development Program (RPDP). Sean Hill introduced himself; he is IT Director with Henderson District Public Libraries. Brian Mitchell introduced himself, he is the Director of the Governor's Office of Science Innovation and Technology (OSIT). Jessica Snaman introduced herself; she is with Nevada Outdoor School (NOS). Andy Hart introduced himself; he is the Executive Director at Southern Nevada Conservancy.

- IV. **Approval of the Minutes from the March 2, 2017 Meeting:** (For possible action)
Aaron Leifheit – Co-Chair
Amy Page – Co-Chair

Co-Chair Leifheit made a motion to approve the minutes of March 2, 2017. Co-Chair Page seconded the motion. The motion passed unanimously.

- V. **Present White Paper on Informal STEM to Group:** (For information only)
Aaron Leifheit – Co-Chair
Amy Page – Co-Chair

Co-Chair Leifheit discussed the current updating of the white-paper, which is a document reflecting this group's mission and goals for STEM learning in Nevada. He said he and Co-Chair Page have been working on the document for several months. He said the subcommittee needs to begin reviewing it.

He added the final versions needs to be completed soon, as it can be used as a platform to represent what this group is good at and what we are about. He commented the updated version of the white-paper is what we are presenting here today. Mr. Hart said the document definitely states our purpose distinctly. He added anyone could read it easily and it is approachable. The group agreed. Co-Chair Leifheit asked Mr. Mitchell what the next step to making this document official would be for the subcommittee. Mr. Mitchell replied the STEM Advisory Council is going to have an “In-Person” Meeting in Las Vegas in late June or early July, 2017. He said he would like to invite all of the subcommittees, including the Informal STEM Learning Environments Subcommittee, created by the STEM Advisory Council to that meeting to present to the council what your group has been doing. He added it would be useful for the members of this subcommittee to hear from all of the other subcommittees and what they are working on as well. He said he believes there is some overlap with the subcommittees, which is good and will allow you to network with one another. He said if this document, the white-paper, is not finalized by that meeting date, you could just present an update at the meeting. We can formalize this document at a later date upon its completion. Mr. Carroll asked if this subcommittee should bring the white-paper, in its current form, to that meeting and perhaps use that as an opportunity to seek feedback from the Advisory Council on how they see informal STEM learning. Mr. Mitchell replied that would be great. He added the meeting would allow this subcommittee to comment on and present what you are trying to accomplish as a group and where you fit into the overall Strategic Plan. You will be given an opportunity to seek feedback and answer questions. He added the white-paper is good work and this subcommittee consists of the experts that are needed in this process, which is where the STEM Advisory Council sees the value in this subcommittee.

It was asked what happens with the white-paper after it is presented to the Advisory Council. Mr. Mitchell asked what the subcommittee would like to see happen. Co-Chair Page said she and Co-Chair Leifheit would like to see the white-paper become a part of the introductory to their Strategic Plan. Mr. Mitchell asked whether the subcommittee would eventually like to do some outreach to other informal STEAM providers in the state to help adopt best practices as an eventual goal. Co-Chair Page responded it would. It was discussed that a big part is to have a document that everyone can agree on.

Mr. Mitchell explained that the STEM Advisory Council would like to get more specific with their Strategic Plan. He said once this subcommittee has a document ready to present to the STEM Advisory Council adding specifics in

areas of focus by this subcommittee, you will vote to ratify it within your subcommittee. Next it will go before the STEM Advisory Council for a full vote. It was asked if this process could be completed before the end of summer 2017. Mr. Mitchell responded it could. There was discussion on the final date for getting comments on the white-paper.

VI. Best Practices Presentation on Suggestions for Best Practices in Informal Education in Nevada, Based on Documents Presented at March 2, 2017

Meeting: (For information only)

- a. NV Governor's STEM School Recognition Rubric
- b. Iowa Governor's STEM Advisory Council Seal of Approval
- c. Change the Equation Design Principles Rubric 3.0
 Aaron Leifheit – Co-Chair
 Amy Page – Co-Chair

Co-Chair Leifheit said we are hoping to have some best practices along with the white-paper. He referred the committee to the three (above titled) documents. He said he and Co-Chair Page took items from each of those documents, which were relevant to informal education and added them to the informal learning concept paper. He added we are looking for comments on how far we should take best practices; whether we develop our own rubric, have guidelines, or simply adopt a document from another organization to save ourselves time. We are looking for guidance and direction with the best practices. He pointed out this information is all within the white-paper under a section entitled "Best Practices and ISL Programing." He referred the subcommittee to the six best practices highlighted, taken from documents shared by the subcommittee at the last meeting.

Co-Chair Leifheit said the goal is to set a standard that everybody agrees on. He said the vision we are trying to negotiate at this time is that if funding was put into place for informal education, these best practices could be used as a starting place showing who within the state is doing informal education well, and how they are doing it, who we pick to partner with and who we fund.

Mr. Mitchell suggested it would be wise to develop a Nevada specific set of best practices or perhaps a rubric, similar to what Iowa has done. Something where you could rate different programs as a means of quality control and spreading best practices for state STEM programs. He agreed that the eventual goal is to convince the Legislature that this is worth funding, however, we need to have a lot of the infrastructure in place first. He added if we have Nevada specific best practices as well as best programs that are meeting those best practices and requiring funding, this would be an easier

ask at the legislative level. He suggested the subcommittee develop a rubric and invite informal STEM programs to apply to receive an official designation. We could then talk to the STEM Advisory Council about creating an official informal STEM program designation, then maintaining a list on the website which advertises those programs. He added we would therefore encourage the good programs and weed out the bad programs.

Co-Chair Leifheit said the first step would be to develop best practices based on the three (above-mentioned) documents as a type of rubric. Similar to the white-paper, we could then adopt the best practices as a subcommittee, and present it to the STEM Advisory Council to be ratified and approved. Once we have best practices adopted, we could invite programs and partners to apply for a type of “seal of approval” as a state approved informal STEM program. Mr. Mitchell said this subcommittee would develop the standard once it gets ratified and approved by the STEM Advisory Council as an official standard. After that, programs could apply for that designation through an application process, which this subcommittee would decide what that application process looks like. He said based on each programs evaluation by this subcommittee on your rubric, you would decide who would receive the designation. He added that programs designated as official Informal STEM programs could then use that designation as advertisement. It was agreed that this subcommittee would be in charge of the evaluation of the programs that apply.

Mr. Carroll asked whether it would be a good idea to keep the standards included with the white-paper but keep them rather general, by adopting the rubric from ChangeTheEquation (CTE), which is already underway in terms of development. Co-Chair Leifheit asked the group if they feel they should adopt the rubric from CTE or create their own Nevada-specific rubric, possibly based on other documents already made.

Co-Chair Page said no place in these best practices actually differentiates, for example, a nature walk from legitimate STEM education. She added these best practices are for informal education but not necessarily STEM education. The group continued the discussion of a CTE rubric being used for the measurement of STEM programs.

Mr. Mitchell commented that another subcommittee is using the CTE rubric to evaluate in-school formal STEM curriculum. He said they are taking the CTE rubric and leaving it as is and only adding a few Nevada-specific items they would like to focus on. He said that might be the model for this subcommittee

to use as well. He said in looking at CTE's national database with programs already approved, each one of those would need to apply to receive the Nevada designation as well. He added by using CTE's rubric it would be significantly less work than creating a totally new rubric. It was asked to what degree the subcommittee could make changes to CTE's rubric. Mr. Mitchell responded he would be happy to set up a meeting between this subcommittee and CTE. He added that CTE asks that their rubric not be altered at all, but they do allow you to add additional requirements specific to Nevada. He said if a program meets all of the requirements on the national level along with the requirements of Nevada, then the program can be certified in Nevada, and CTE will add those programs to their database.

Mr. Mitchell commented if this subcommittee determines that using the CTE rubric works best, it would be an excellent way to tie into what formal STEM provider's standards require by having informal providers meet those standards as well, strengthening the standards by similarity. The group further discussed the advantages of having informal and formal STEM learning groups being connected with similar practices and language engagement. Mr. Hart discussed the importance of an evaluation with the subcommittee's rubric and added that as a group we need to know exactly what we want to accomplish and what is expected of us. He added we need to understand what type of evaluation we can do to make our programs better and promote those ideas. It is not that evaluations are not important, but rather what the context is for and how it operates, which is significantly different with formal versus informal STEM education. Evaluations should be on the rubric with the approach that we make sure programs applying for this designation are actively thinking about how their programs are impacting their participants and how they can improve their program, which look different between formal and informal STEM education. It was discussed that evaluation is critical to help make sure these are quality programs.

Co-Chair Leifheit said we have a pretty good plan. Once we decide on our best practices, we could possibly adopt CTE's rubric and add some specific items for informal education, which should put us on a path to approving quality informal STEM education programs.

- VII. Discussion on Next Steps Incorporating White Paper and Best Practices into a Logic Model or Strategic Plan for the State (For information only)
Aaron Leifheit – Co-Chair
Amy Page – Co-Chair

Co-Chair Leifheit said we may have a lot of work to do before we get to the point of incorporating our white-paper and best practices into a logic model or strategic plan, but said he believes that is where the subcommittee is headed. Mr. Hill commented he was pleased to be involved with this subcommittee and added that a logic model is one way we could impact this process. He volunteered to start work on a logic model. Co-Chair Leifheit said the group would be very happy for that process to begin and they would follow up with more details at the next meeting.

VIII. Discuss and Agree on Communication Strategies to Other Informal Education Organizations in Nevada (For information only)
Aaron Leifheit – Co-Chair
Amy Page – Co-Chair

Co-Chair Leifheit pointed out there is a larger community in Nevada with many of our same concerns and we should reach out to them. He added we have not made much progress in adding communications with other informal STEM organizations within Nevada. At this time we need to discuss who else we should be reaching out to as well as how we reach out. It was suggested to reach out to Northeastern Nevada and rural areas. Possibly after the white-paper and logic model are complete, so to demonstrate this subcommittee's goals making it easier for others to come onboard. Co-Chair Page said two different things are happening, Mr. Hart is advocating for more statewide outreach and others are thinking more about diversity wherever it is happening. She asked whether this group is currently reaching the entire state with informal science education or other types of informal education that we don't necessarily connect with. She asked whether the group is communicating and reaching the entire state as well as different types of providers. She asked whether it is this subcommittee's responsibility to reach out to them or is it the providers that need to reach out to us. Mr. Hill suggested leaving the subcommittee small and manageable, as is. There may be time to invite statewide providers to join the larger circle. He said a first step to that would be to identify where those people are. He suggested creating an email list. Through and email, we may generate more people who want to become involved with this subcommittee creating a network that could push out information statewide. Co-Chair Page replied it sounds good, similar to the NV STEM Coalition.

Co-Chair Leifheit said that sounds good, we now need to focus on finishing the white-paper and best practices, along with a logic model. He said the group should continue this discussion on outreach after their completion. It

was discussed that a member of this subcommittee should be designated as the group's communications person for starting the task of outreach.

IX. Consider Agenda Items for the Next Meeting (For information only)

Aaron Leifheit – Co-Chair

Amy Page – Co-Chair

Co-Chair Leifheit suggested the white-paper be presented at the next meeting along with updates on best practices. He added after we present those documents to the STEM Advisory Council at their next meeting we can have a discussion of those results. He asked Mr. Hill if he would be able to complete a draft logic model prior to this subcommittee's next meeting. Mr. Hill responded he would be able to complete a draft by the end of June 2017 and will share it with the subcommittee digitally for additional input.

X. Next Meeting Date Will be Determined at this Meeting (For information only)

Aaron Leifheit – Co-Chair

Amy Page – Co-Chair

Co-Chair Leifheit asked whether the group felt they should meet before the next STEM Advisory Council's meeting in Las Vegas. Mr. Mitchell stated the date for that meeting was not yet set but they were looking at late June or early July, 2017. He added he will advise this subcommittee as soon as a date is decided upon. Co-Chair Page suggested continuing to review the white-paper and best practices documents between members online up until the STEM Advisory Council meeting. She suggested the subcommittee's next meeting be after the STEM Advisory Council's next meeting.

Co-Chair Leifheit suggested the next meeting be on Monday, July 17, 2017 at 9:00 a.m. The group was in agreement.

XI. 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.)

There was no public comment.

XII. Adjournment

Co-Chair Leifheit adjourned the meeting at 10:06 a.m.