



Steve Sisolak
Governor

STATE OF NEVADA

GOVERNOR'S OFFICE OF
SCIENCE, INNOVATION &
TECHNOLOGY

100 North Stewart Street, Suite 220
Carson City, Nevada 89701
775-687-0987 Fax: 775-687-0990



Brian L. Mitchell
Director

PUBLIC MEETING MINUTES

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

Date and Time of Meeting: Tuesday, September 1, 2020 at 3:30 p.m.

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.

Members of the public may submit public comment by logging into the ZOOM webinar by accessing the following link;
<https://us02web.zoom.us/j/83303394496?pwd=MkVQK0hlQmtdU15clhzNGUwaFhVQT09>
Meeting ID: 833 0339 4496; Passcode: 595058

To submit public participation or to participate in an agenda item or for supporting material submissions, email Debra Petrelli at dpetrelli@gov.nv.gov or by calling 775-687-0987 at least 24 hours in advance of the meeting.

1. Call to Order / Roll Call

Tracey Gaffney

Informal STEM Learning Environments (ISLE) subcommittee was called to order by Tracey Gaffney at 3:35 P.M. on September 1,2020, on the above online meeting. She will be running the meeting today.

Members Present

- Aaron Leifheit
- Craig Rosen
- Judy Kraus
- Kristoffer Carroll
- Mauricia Baca
- Nancy Maldonado
- Sean Hill
- Tracey Gaffney

Members Absent

- Amy Page

Staff Present

Debra Petrelli

Guests Present

Marcos Olayo, Rose International, Client Engagement Associate

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 Gaffney

There was no public comment.

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

Ms. Gaffney welcomed everyone today and pointed out that membership had changed since the last meeting back in September of 2018. The group reintroduced themselves; Tracey Gaffney, STEM Program Manager – OSIT; Debra Petrelli, Executive Assistant – OSIT; Aaron Leifheit, Program Director at a non-profit, Get Outdoors Nevada located in Las Vegas; Mauricia Baca, Executive Director at Get Outdoors Nevada; Nancy Maldonado, Vice President of Education at PBS Reno; Sean Hill, Director of Education Programming at Sierra Nevada Journeys; Judy Krause, Teacher at Hyde Park Middle School, Clark County School District; Craig Rosen, oversee the professional development at Desert Research Institute and Managing Director of the Nevada STEM Networks; Kristoffer Carroll, K-12 Science Coordinator at Clark County School District.

- 4. Approval of the Minutes from the September 26, 2018 ISLE Subcommittee Meeting**
(For possible action)
Tracey Gaffney

Ms. Gaffney asked if there were any corrections to the September 26, 2018 Minutes as written. None were made. Mr. Hill made a motion to approve the Minutes of September 26, 2018, as written. Mr. Rosen seconded the motion. The motion passed unanimously.

- 5. Discussion on Committee Goals, Timeline, and Membership** (For possible action)
Tracey Gaffney

Ms. Gaffney said since it has been quite some time since the subcommittee last met, she would like to review the objectives of the subcommittee and talk briefly about diversifying membership. She said the subcommittee works to join informal and formal learning opportunities with the goal of enhancing STEM learning in Nevada. She pointed out the subcommittee's strategies include identifying, promoting and scaling best practices, and will now begin to look at assets in Nevada and identify any gaps. She said the structure of the subcommittee has been changed slightly as have all the Governor's STEM Advisory Council's subcommittees. She said OSIT realizes everyone on these subcommittees are already busy with full-time jobs and because a chair is more of a position that requires

specific skills for facilitating committee meetings with agendas, preparing materials etc., as well as reporting the committee's findings to the Council. She said OSIT will now take the role of chair for each subcommittee. She added this will give each of you, the experts, a chance to focus on and share your knowledge and expertise, leaving OSIT to do more of the groundwork in between meetings. She said in addition to this change, Regional STEM Networks have been put in place in three areas around the state. OSIT has partnered with the Desert Research Institute to manage the Networks with Mr. Rosen appointed as Managing Director to oversee these efforts in the three regions. She said those three groups will work together in an informal STEM learning environment with this subcommittee being the experts assisting with resources, webinars, etc. She said the Networks will help to identify any needs or opportunities in the different regions of the state and can then assist the subcommittee with distribution of resources with OSIT overseeing the logistical, and practical tasks.

Mr. Rosen commented that the three Nevada Regional STEM Networks were formed in January 2020, supporting the southern, northwest, and rural regions of Nevada. He said each Network has an advisory committee made up of government, education, business and non-profit informal education leaders, which are all involved in STEM. He said the first goal is to identify on-the-ground programmatic gaps or implementation challenges in need of a state-level solution; second to grow interest, awareness, and achievement in STEM in the region; third to carry out on-the-ground implementation of state-level programs/goals; fourth to identify and build local programs and initiatives worthy of scaling statewide; and fifth to create and facilitate partnerships and the sharing of resources among K-12, higher education, and business/industry within the region. He said one way to accomplish these goals is by offering grants to coordinate partners representing K-12 and Higher Education, business, industry, public libraries, after-school providers, non-profits, government, and philanthropy to identify and scale up high quality STEM programs that will prepare students for Nevada's 21st century workforce. He said the first round of funding was just recently completed to a variety of organizations throughout the state, of approximately \$180,000. He added that the next step in the process is to craft a new statewide strategic STEM plan and once in place, a virtual STEM summit will take place, and is currently scheduled for October 21, 2020. He encouraged everyone to attend and/or participate. He said after the summit a second round of grant funding is expected and hopefully the RFP will be released in late December of this year. Ms. Gaffney added this subcommittee will now be supporting work for the Regional STEM Networks, and will also need to start work on an asset map, which she has already begun to put together.

Ms. Gaffney said to refresh the subcommittee on past accomplishments of ISLE, she re-introduced the "Informal STEM Learning in Nevada" whitepaper prepared by ISLE in 2018, which includes attributes of high-quality STEM learning, as well as a vision for the state, and encouraged all members to refamiliarize themselves with it. (It can be found on the OSIT website at: http://osit.nv.gov/STEM/ISLE_Subcommittee/)

Ms. Gaffney commented on the Logic Model, also prepared by ISLE for the STEM Advisory Council's Strategic Plan in which some of the pieces have already been completed. She added that a list has been prepared for informal STEM assets in Nevada and a survey is going out to those groups. She commented that Mr. Leifheit has shared those results with her and she has put together the results. She said from here, in looking at the Logic Model, the next

steps are to identify ISE development needs and strengths based on the proficiency survey and to create/curate resources to address community needs.

Ms. Gaffney said after recent meetings with each of the members of the subcommittee for input on next steps as well as the vision for the subcommittee, she has summarized some of those ideas. She commented that everyone was on the same page with their ideas, which included the following;

Asset Mapping:

1. Identify: available programs, duplicates, gaps, niches, untapped populations/topics/grades,
2. Networking:
 - a) Address duplicates. Gaps, niches, untapped populations/topics/grades (map analysis)
 - b) Build capacity of current programs (PD, rubric)
 - c) Scale/replicate current programs (Network grants)

Grow formal and Informal Relationship:

1. Communicate benefits of ISL to formal education
2. Create/compile resources
 - a) For ISL programs – how to market, how to move online
 - b) For formal educators – how to enhance learning with ISL, virtual field trips

Ms. Gaffney commented that all of the above align with the Logic Model and where this group is heading next in 2020-2021, which will also include:

Identify Needs

- Asset Map (gaps)
- ISLE Survey

Develop Supports

- Network Grants
- Webinars
- Toolkits
- Contact Information

Share & Implement Supports

- Summits/Seminars
- One-on-One
- Match Programs
- Networking
- Online Compilation

Mr. Rosen recommended that the subcommittee should celebrate where it has come from and how far it has gotten. He commented that one of his reasons for getting involved was to identify funding for informal STEM education. He said that stream is now available through the Nevada Regional STEM Networks to support informal education. He added this has come a long way and that the work started so long ago is now actually producing results.

6. Discussion on Nevada STEM Asset Mapping and Priorities (For possible action)

Tracey Gaffney

Ms. Gaffney presented asset map data from the Networks' Asset Survey that went out to STEM stakeholders throughout the state. She said about 44 informal programs in total responded, and in Mr. Rosen's Network meetings last week an entire new list of additional informal STEM programs that did not fill out the survey was put together. She pointing out the list was quite extensive consisting of another 137 programs. After the group reviewed the different programs and data, Ms. Gaffney asked whether more or new data was needed, such as where gaps/needs are seen, or how those gaps/needs can be addressed and where to start. She pointed out that in looking at the Networks' Asset Survey, information was requested on Timeframes and when informal programs took place, i.e during the school year, after school, summer, school breaks; Region and where the program takes place, i.e. southern, rural, or northwest Nevada; Subject, i.e. science, technology, engineering, math, arts; and by Audience, ie PK-2, 3 -5, 6-8, 9-12, family education, college, adult education, educators.

There was a group discussion on information presented showing percentages and breakdowns on the above information received from 21 different informal organizations with approximately 44 programs. Ms. Gaffney said one consideration to include is the lack of demographic data. She pointed out that after the programs were asked who they serve, only 5 or 6 programs offered that breakdown information. Another consideration, she pointed out, was "STEM" versus "STEM subjects" in that some programs only responded on one subject, i.e math or engineering, and not for all STEM subjects. She added that this list of programs is considered fluid data and will continually have information added, because much of the information offered is flexible and some programs are changing. She pointed out this information is a small snapshot of what is offered while the network is continuing to be built. She said once this list is published, which should be in the near future, it will hopefully be the catalyst for all informal programs to participate in.

Ms. Baca pointed out that rural areas of Nevada had very little reporting included. Ms. Gaffney added that each of the Network Regions determined that rural areas had the smallest list for both formal and informal programs. She said the only programs rural areas had listed were also statewide programs. The group further discussed the breakout and per capita data. Mr. Rosen commented that data has not yet been captured by the Rural Networks identifying other informal programs in the area but expects to contact them for this information. It was discussed that several programs listed are not bound by a region. Ms. Gaffney asked for suggestions on other ways to sort this data. It was suggested by location served. Mr. Carroll commented that OSIT's regional approach for the three networks is defined as follows; the Southern Region only includes Clark County; the Rural Region includes Churchill, Elko, Esmeralda, Eureka, Humboldt, Lander, Lincoln, Nye, Mineral, Pershing, and White Pine Counties; and the Northwest Region includes Carson City, Douglas, Lyon, Storey and Washoe Counties. He suggested adding a third dimension to the pie charts by adding the depth of different programs and including the length students engage in them, whether formal or informal. He said it would demonstrate, especially in the rural region, how a program might consist of year-long work versus a day, week, or hour. He added that with the ability to push funding into an area it might make that decision easier if there is a better understanding of the length of time involved in a program. Ms. Gaffney pointed out that the informal STEM survey sent out did include a request for that information and concluded that with the charts presented today, funding decisions should not be based solely on them.

Mr. Carroll commented that the charts and graphics offer good information, especially in the “Audience” area, by demonstrating the easier area to introduce informal education, i.e. K-12, in which the programs are much easier to reach out to and getting programs started on a campus by campus basis. He pointed out the difference between that and other areas, ie. teachers, college level, family, adult engagement, and noted those are extremely valuable for the ecosystem of informal STEM education from both a support angel and a value placement.

7. Discussion on ISLE Survey (For information only)

Tracey Gaffney

Ms. Gaffney said the other set of data she would like for the subcommittee to take a look at is the ISLE subcommittee survey which went out in March 2019 and responses were collected through that summer. She pointed out some of the information received included program needs, program evaluation, sustainability, replication, capacity, content, and underrepresented groups. She said that within each of those sections, she pulled out the pieces most requested by those who took the survey, which included:

- Creating a landscape analysis
- Creating program evaluations
- Creating reports about my programs to share with others
- Improving my programs based on evaluation data collected
- Demonstrating program capacity in your organization

She asked the group whether updated data was needed or whether this obtained data should be used. It was pointed out that more data is always good, but with so many needs assessment surveys currently going out, and even with the changing landscape, they should use the data they have as opposed to re-administering the survey. The group agreed. Ms. Gaffney further discussed the breakdown of the survey. Mr. Leifheit commented that the survey was sent out to approximately 100 organizations and only 20 responded, so this is a smaller set of data than previously analyzed data. Mr. Rosen commented that replies to the survey were much heavier from northern Nevada.

Ms. Gaffney suggested the subcommittee begin with the focus of sustainability and evaluation. Ms. Carroll asked how much of their efforts should be focusing on the evaluation process and practices. He said in looking at the survey data, it asked about finding a third-party evaluator which did not have as high of rating as people wanting to self-evaluate. He pointed out the value in that is because people really passionate about their programs are really interested in making sure they are doing them right and do not necessarily care about an outside person telling them whether it is being done right. He said possibly focusing efforts in that space helps the subcommittee and helps the Regional STEM Networks in terms of whether they already have gone through cycles of evaluation of their program, or whether it leaves them in a constant stage of updating, fixing, etc., based on feedback. He said there is an inherent sustainability in people doing that work because if you do not believe you are sustainable you do not continue to revise your work. Ms. Gaffney suggested aligning the evaluations to what the Regional Networks are looking for as well. Mr. Hill said there could be an external component, a hesitance to indicate that you want external evaluation because of the cost and whether it is affordable. Ms. Kraus commented that it may be just understanding how an evaluation is done and asking for help as to what your effectiveness is and meeting your goals. Mr. Carrol added there are tools available for evaluation, however

he has not come across one that is robust enough for informal STEM that does not isolate a specific discipline.

Mr. Rosen asked whether groups are being evaluated based on the State's rubric for evaluation of a STEM program or whether groups are looking for evaluation just for their own self-knowledge, because there is a difference. He said at one time groups were steered to the State's rubric for STEM evaluation, but he believes that informal educators did not have everything necessary to actually achieve it and ended up not pursuing it. It was further discussed that this survey was based upon the state's rubric and each category was drawn from that larger document.

Ms. Gaffney said from this discussion it appears we should start with evaluation and sustainability to include:

Evaluation:

- Creating program evaluations
- Creating reports about my programs to share with others
- Improving my programs based on evaluation data collected
- Finding 3rd party evaluators

Sustainability

- Demonstrating program capacity in your organization
- Determining cost/benefit analysis
- Increasing program sustainability
- Determining program costs
- Creating letters of support

8. ISLE Subcommittee Member General Announcements (For information only)

Tracey Gaffney

Ms. Gaffney announced she would like to see the subcommittee meet quarterly as follows:

Fall: October/November

Winter: January/February

Spring: April/May

Summer: July/August

She said prior to the next meeting she would suggest that members of the subcommittee have further discussions offline on some of the evaluations already in place and where the subcommittee should go from there, which could include outside experts or possibly evaluations already in place that can be built on.

Mr. Hill announced that this fall Sierra Nevada Journeys is offering modified classrooms, which are typically in-person, hands-on, in the classroom and field trips, have now been transitioned into a virtual experience. He said through their partnership with the Regional STEM Networks, they have created curriculum that can be accessed on their website, specific for rural Nevada teachers and Clark County teachers. He said they are testing a model in Northwest Nevada communities, which includes virtual programming supported by live webinar components with prerecorded virtual field trips. He added this is being field tested as a fee-based program. He added that because there is limited funding for teachers and schools, which ultimately puts Sierra Nevada Journeys and other fee-based organizations

in a tough spot, and because they still want to see students, and support teachers, they will start piloting free programs at Title I schools with teachers they already have relationships with. He said it may turn out that the majority of the work being done by Sierra Nevada Journeys will have to be for free. He said because his organization is supported on both program fees and fund raising, their model is going to shift to be more reliant on fund raising.

Ms. Maldonado commented that PBS is also facing some of those issues, except they have always been free for teachers and schools to use their programs, and now the struggle is finding the time in teachers virtual distance learning classrooms. She said as schools are figuring out what distance learning looks like, teachers are getting in reading and math, but science and social studies are being pushed to the side.

Mr. Leifheit commented that Get Outdoors Nevada also has been doing a lot of virtual programming and has made most of it synchronous, so even if teachers cannot provide live programs, they can access programs and share with their students at any time. He said Get Outdoors Nevada is building in options for synchronous contact for teachers to either view live or take the content and then share with their students. Ms. Baca commented that all content is provided at no-fee to their customers, i.e. NGSS programs in Clark County, Safe Key programs, or other summer programs done at community centers. She added that Get Outdoors Nevada mainly depends on fund raising because their focus is on lower-income participants.

Mr. Carroll commented on working in Clark County School District (CCSD) with teachers, on the formal education side, it is apparent that their work is currently on the over-whelmed side with just the number of things involved with the many strategies to use with online tools. He said he anticipates that a rhythm will settle in for the first few weeks before more supports are pushed towards them. He said as the system migrates, he anticipates rural school districts who do not have the staffing that CCSD has, will not have an adequate number of curriculum and technical folks. He added that putting some of these issues into perspective and as programmatic issues shift, supports will be needed in the not to distant future.

9. Consider Future Agenda Items for the Next Meeting (For possible action)

Tracey Gaffney

Ms. Gaffney said the next meeting will be the Fall meeting in either October or November 2020 and a calendar poll will be sent out shortly. She said through off-line conversations prior to that meeting she anticipates an informal STEM program evaluation tool will be ready and can be shared at that meeting. Mr. Hill asked whether the evaluation route they are taking is just building another “one size fits all” rubric or whether it is helping to build evaluation systems, i.e. a logic models or thinking through the “how.” He posed the question of whether this subcommittee should support the “how” or the “what.” He pointed out in past experience working with the state’s rubric, which did not appear to be a “one size fits all” was very specific in assessing STEM advocacy by category, and asked whether that is the route the subcommittee should follow or should the discussion be more about frameworks of evaluation, or maybe even both. It was agreed that was a good point. Mr. Carroll said he believes the framework piece allows for more people to drill down based on the specificity of what their program is intending to do. He said by having lots of things to

sort through when only one thing needs to be done better just doesn't make sense. He said the idea of a framework allows people to make decisions a kind of pathway. He added he does not believe they need to build it, as it already exists, but rather produce a framework of how to do it. Mr. Hill agreed. Mr. Rosen said behind the scenes the question is what are they evaluating and why are they doing the evaluation. He pointed out that the "why" also needs to be identified.

Ms. Gaffney requested that any member with other agenda items may submit them to her via phone call or email before the next meeting.

10. 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 Gaffney

Mr. Marcos Olayo, who works in a specialized staffing area for IT and technology specifically with engineering, graphic designer, and networking, sees a lot of challenges for young graduates that need work experience to jump on board with a career and asked whether partners are being used to help identify those gaps when an education program is launched and could possibly help them with the fulfillment of that career. He said he sees a huge gap in the ability to get young individuals or adolescents excited about the future of the workforce transitioning, especially during this pandemic. He said the question is how do we create those simple turnkey solutions for our community, especially for those who are having trouble acquiring those resources. He added he wants to see where our landscape currently is. He commented that being in Las Vegas since 2009, he has seen many ups and downs with the economy, but feels strongly that the growth has created a real potential for bringing out these wonderful positions to our community and let them understand that this is where the workforce is heading.

11. Adjournment
Tracey Gaffney

Ms. Gaffney adjourned the meeting at 4:41 p.m.