

BRIAN SANDOVAL
GOVERNOR



BRIAN L. MITCHELL
DIRECTOR

STATE OF NEVADA
GOVERNOR'S OFFICE OF SCIENCE, INNOVATION AND TECHNOLOGY

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

MINUTES

Name of Organization: Advisory Council on Science, Technology, Engineering and Mathematics (STEM)

Date and Time of Meeting: **Friday, July 7, 2017 at 10:00 A.M.**

Place of Meeting: Grant Sawyer State Office Building
555 East Washington Ave,
Suite 5100
Las Vegas, NV 89101

This meeting will be video conferenced to the following location:

Nevada State Library and Archives
100 N. Stewart Street, Conference Room C (2nd Floor)
Carson City, NV 89701

If you are unable to join the meeting in person, please use the following numbers:

Northern: 775-687-0999 or
Southern: 702-486-5260

Access code: 70987 then push #

- I. Call to Order/Roll Call
Mark Newburn, Co-Chair

Chair Newburn called the meeting to order at 10:05 a.m. He will run the meeting today.

Members Present: Mark Newburn, Kelly Barber, Richard Knoeppel, Shelace Shoemaker, Judy Kraus, Dave Brancamp, Dr. Carl Reiber, Camille Stegman

Members Excused: Marcus Mason, Rob Elliot, Cory Hunt, Christopher Sewell

Guests Present: Craig Rosen, Marisa Cooper and Tia Flores - Integrating Arts and Culture into STEM Subcommittee members; Aaron Leifheit and Amy Page – Informal STEM Learning Environments Subcommittee members; Brandolyn Thran, - Community Partnerships Subcommittee; Kimberly Moody – Computer Science Subcommittee member

Staff Present: Brian Mitchell, Debra Petrelli

A quorum was declared.

- 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**
Mark Newburn, Co-Chair

Chair Newburn welcomed everyone and especially everyone that came down from Northern Nevada for our “In-Person” meeting of the STEM Advisory Council as well as today's guests; Marisa Cooper, Director of Education at the Nevada Museum of Art, introduced herself. She is a member of the Integrating Arts and Culture into STEM Subcommittee along with Tia Flores, Program Director at Sierra Arts Foundation, Craig Rosen with Desert Research Institute (DRI), GreenPower Education Administrator and Community Relations, is a member of two subcommittees, Informal STEM Learning Environments and Integrating Arts and Culture into STEM; Aaron Leifheit, Education Director for a non-profit, Outside Las Vegas Foundation and Amy Page, Strategic Planner for the Nature History Museum

- IV. **Approval of the Minutes from the April 18, 2017 meeting** (For possible action)
Mark Newburn, Co-Chair

Ms. Stegman made a motion to approve the Minutes of April 18, 2017. Mr. Knoepf seconded the motion. The motion passed unanimously.

- V. **Review of the STEM Advisory Council's Last Two Years' Activities** (For information only)
Brian Mitchell, Director, OSIT

Chair Newburn commented that STEM has come a long way, especially in the area of awareness. He said in 2012, at the STEM Summit, very few people knew what STEM was within the state including the legislative body,

and from that time to now, the legislature has become very familiar with STEM, which demonstrates how far we have come.

Mr. Mitchell discussed the accomplishments of the STEM Advisory Council over the last two years. He said the Strategic Plan 2017 was a big accomplishment and all members were instrumental in putting this together. Next he discussed the STEM School Designation Event, which also was very success, as well as the K-12 STEM Challenge - Student Recognition Events. He added we also have the addition of five permanent subcommittees to include Computer Science, Informal STEM Learning Environments, Integrating Arts and Culture into STEM, Community Partnerships and STEMworks. They are all doing great work. By leveraging the efforts of other people in the community who want to do work in different aspects of STEM, this council now has an army of people that are working together in the same direction.

- VI. Recap of Relevant Legislation from the 79th Legislature (For information only)
Mark Newburn, Co-Chair
Brian Mitchell, Director, OSIT

Mr. Mitchell referring to the “STEM Legislative Update” handout, pointed out two bills relevant to STEM from the 79th Legislative Session. SB241 was a bill sponsored by Senator Woodhouse and the Clark County School District (CCSD). It will recognize students who have a high proficiency in STEM or STEAM. He talked about last legislative session, a bill passed that affixed a seal on a student’s high school diploma certifying the student was bilingual upon completion of a certain number of courses and passing them. He said SB241 piggybacks on that same effort and establishes a state seal for STEM and one for STEAM beginning in the school year 2018-19. The hope is a student who does well in math or science and receives the seal, goes on to an in-state college or university. This seal would be looked at by that institution as a way to ascertain whether a student was qualified for a particular program. The STEM Advisory Council’s role in this bill will be helping to make the school districts aware of this program, particularly school guidance counselors.

Chair Newburn commented this is important because it sets a new and higher-level bar in preparing a student for STEM career-ready college classes. There was more discussion on working with UNR and UNLV to promote this program and find ways to channel more students into the sciences who are on a STEM-career path. There was discussion on working with the National Council for Higher Education (NCHE) in pulling those students in who are self-identified by getting the seal. We need to engage those students more to keep them at in-state universities. There was discussion on college and university admissions and their pre-requisites. The council discussed scholarships at the universities and opportunities for

students. One idea was possibly addressing the deans of those institutions for additional criteria for potential student scholarship awards. The goal would be that Nevada universities give preference for scholarships to students with this seal on their diploma. Chair Newburn said this is a start, we now need to educate higher education to target these students.

Chair Newburn commented on SB200 which requires all high schools to offer a course in computer science by 2022. This endeavor consisted of about two years of work with Code.org, the Expanding Computer Science Alliance, and the Computer Science Teachers Association. The highlights of the bill include; within 5 years all high schools will have to offer an approved computer science course; in addition they have to have plans to expand access and participation to girls, under-represented minorities and kids with disabilities. It was discussed that an advantage for Nevada is that UNLV has one of the leading researchers in teaching computer science to kids with disabilities, Dr. Andreas Stefik. Schools all over the country use his programming language and software. Chair Newburn commented that in addition, the state has to develop State Standards in Computer Science, because kids will have to receive training in computer literacy. Currently there is a one-half credit high school requirement for keyboarding classes, offered in middle school. That education will now be moved to elementary school, because of online testing, students will now need to have this skill by the third grade. It also places the Computer Science Subcommittee in statute, giving the subcommittee specific responsibilities as computer science experts to make recommendations to the State Board of Education, as well as to this STEM Advisory Council. He added it allows us what we need to take the one-half credit computer literacy graduation requirement and inject computer science into it. We will attempt to upgrade that course to have more computational problem solving, making it more of an advanced applications and computer science course. He added this bill makes Nevada one of the leading states in the nation in terms of K-12 Computer Science.

Chair Newburn pointed out the last item from the legislature, also introduced by Senator Joyce Woodhouse, was a bill to start the new engineering college at UNR, which includes the funding to start designing a new building. It was discussed that UNLV is currently out of capacity; not enough space or enough teachers to teach engineering.

Also mentioned were a couple of funding sources that were continued by the legislature that will have a STEM impact; one is the continuation of the Great Teaching and Learning Fund, which is state money that can partially be used for STEM teacher development and is passed down to the school districts. Another is the College and Career Readiness Grant, which is approximately \$8 million each year of the biennium.

It was mentioned a yearly recognition of a STEM teacher would be something to possibly add to events, then inviting them individually to the STEM School Recognition Event, similar to Science Teacher of the Year. There was comment that a similar program is put on by the Reno Gazette Journal.

VII. Review of STEM Council Statutory Duties and Discussion Regarding Implementation Plans and Areas of Focus for the Next Two Years (For possible action)

Brian Mitchell, Director, OSIT

- Mr. Mitchell gave an overview of the Strategic Plan Matrix and Asset Map. He referred to “Priority 1 through Priority 3 along with Goals and pointed out this document could be used as an asset map or matrix to plan what some of the needed requirements are to start accomplishing this councils future goals. He pointed out this is a working-document that will guide the council’s efforts as well as other interested parties efforts. It was agreed this will give the council specific items to focus on in the next two years.

Priority 1: Equity and Access

Goal 1: Promote Equitable Opportunity for STEM Education Across Nevada

There was discussion on the direct link between student awareness and their interest in STEM and jobs available in the STEM field. Students need reinforcement that STEM is important to their future and does play an important role. There were comments on the need to take advantage of existing STEM industries, i.e. hospitality, IT and security, as partners to promote more opportunities. “Girls that Code” is one group that is starting to make a difference in giving students a reason to follow STEM education. Another program is “Tech Divas,” which teaches coding and engineering. Mentorships coming from former students and the role they can provide to students was also discussed. It was agreed that kids need to be taught the skills associated with today’s “cost of living.” Hopefully improving their aim for higher salary jobs. There were comments on the disconnect between what kid’s think they are going to do and what type of lifestyle that is going to give them. It was the general consensus of the group that programs for kids need to be exciting and engaging, and how captivating student’s attention nationally has become more difficult in engaging students in STEM disciplines. We need to find ways of capturing their imagination and use existing infrastructure within the state to help. There was discussion on the STEMhub website being a good resource for students and teachers. It currently features a variety of STEM careers.

It was suggested that short video clips from professionals could give both students and teachers valued information on these topics. The council discussed how currently, some high schools and middle schools have

students that put together very valuable videos, which we may have access to. These videos can be used as a tool for students to research and find the connection between STEM education and high paying careers. There was discussion to possibly start a competition with the different schools video productions. Kids learn by doing, and by doing research themselves, especially working on things that are fun. There was comment it could possibly tie into the Las Vegas Science and Technology Festival, who already has a similar video competition. The STEM Ambassador Program, which helps to facilitate community partnerships, would possibly be interested in sponsoring internships or possibly students touring STEM-workforce facilities. Another suggestion was videoing an interview with a high school principal regarding STEM programs they are involved in, discussing their approach and successes, then publishing it as a blog-post on the STEMhub website, providing another resource to other high schools.

Active STEM programs were discussed: The Annual Fernley STEM Festival has been very successful, it has exhibits from local STEM businesses and community groups. There is also a similar festival in Elko. The goal is for this council to be the connector and highlight and encourage other communities within Nevada to do these same types of festivals. There was discussion on how these types of events are good in smaller areas where there is an existing lack of access.

Priority 2: Quality and Scope

Goal 1: Improve the Quality and Quantity of STEM Education in Nevada Schools.

There was discussion on current efforts with the new STEM and STEAM seals for increasing the percentage of students that take three years of science. It was suggested to increase the percentage of students taking and passing pre-calculus and calculus in high school. Also mentioned was that rural environments do not always have qualified teachers. It was asked whether we can take advantage of an online environment, allowing someone qualified to reach out to those communities. For some schools internet access is still an issue. It was mentioned that Nevada Virtual Academy; a statewide charter school, is online based. There needs to be a creative way to get to the rural communities, as well as a way to motivate those students. This could be a possible opportunity to encourage school districts to apply for dual enrollment funding.

Goal 2: Increase the Quality and Quantity of STEM Professional Development Opportunities for Teachers and Administrators.

Last year and this year's round of funding supplied professional development for the new Next Generation Science Standards (NGSS), and when done correctly, targets STEM, especially in grades 1 through 5. It was commented on that during professional development, there is an increase in hands-on STEM learning. The focus of many grants include FOSS (Full Option Science System) Kits, which are courses in science for teachers and students doing hands-on science together. It was agreed there was more effort needed in this area. It comes back to the principal making that directive to teachers, which falls under Priority 2: Quality and Scope (Increase the percentage of elementary schools that teach science three plus hours per week). Actionable: What would encourage a principal to make the requirement of teachers to teach a certain amount of science a specific amount of time per week? It was discussed that funding is still an issue.

There was discussion that most science fairs have eliminated students under the fifth grade to participate, which only reinforces those teachers in lower grades not to teach science. The council discussed the current Great Teaching and Leading Fund, which focuses on science, but does not cover materials, leaving it necessary for teachers to be creative in getting materials from other grants. Mr. Mitchel said he is currently working on getting STEM-science materials for classes and asked whether that would assist in getting three hours per week of science instruction to the classroom with hands-on learning. It was noted there are already organizations that already supply science materials for on a check out process, which is not popular with teachers. There were comments on potential grants that teachers could use to apply for small equipment. It was agreed the number one barrier to teaching STEM is the lacking of small lab equipment.

The council further discussed the requirements of professional development in science. University of Nevada, Reno (UNR) requires a math/science combination for elementary school teachers. A suggestion was made that several "rock star" teachers be identified who could give a sample lesson with a FOSS Kit, then post the video on the STEMhub website under teacher resources accompanied by an application for teachers to apply for funding to buy these supplies. We need to find a way to direct teachers to the STEMhub website where these available resources in STEM can be found including funding opportunities.

Goal 2: Increase the Quality and Quantity of STEM Professional Development Opportunities for Teachers and Administrators
Current Efforts: SB200 just pushed computer science down into K-5. Those standards are going to be integrated with other subjects. Computer Science and Computer Literacy tend to be, by definition, hands-on, because students are using a computer.

AB7 is going to allow the State Board of Education to look at graduation requirements. We would like 100 percent of schools to require three years of science and four years of math. Through graduation requirements, we can help to raise that percentage. The work the council has done in the legislature is going to address some of these areas.

There was discussion on the need for concrete efforts for increasing the number of internships, job shadowing and summer research programs, and expanding partnerships with local industry. Mr. Mitchell offered to engage with businesses for this purpose. It was suggested that the Community Partnership subcommittee be tasked with this effort in gathering information.

Under the topic of “Develop and promote the creativity in STEM via STEAM and design” it was suggested to include Integrating Arts and Culture into STEM subcommittee.

It was agreed that the goal with this document, for the next two years, will be to completely populate each category with information. It will serve as this council’s “roadmap” in moving forward. There was a suggestion to have a working-group go through this document.

The committee discussed the topic “Restrict State L-12 Funding (College and Career Readiness Grant) to evidence-based, high-quality formal and informal STEM practices and programs. Create a stable, dedicated funding source for STEM and use State STEM funding to scale.” Ms. Stegman commented on problems with this grant. She said some people who are receiving these grant funds are (1) not reporting their expenditures; and (2) are allowed to apply for another grant without that previous reporting and nobody knowing whether the previous program was successful.

VIII. Break for Lunch

Co-Chair Newburn recessed the Council for lunch at 12:00 P.M.

Co-Chair Newburn called the Council to back to order at 12:35 P.M. for the continuation of Item VII: Review of STEM Council Statutory Duties and Discussion Regarding Implementation Plans and Areas of Focus for the Next Two Years (For possible action)

Mark Newburn, Co-Chair

Mr. Mitchell commented on the STEM Advisory Council logo. He said the same group that created the STEMhub website put together several sample

logos for review. He asked for comments from the council. These could be used on press releases, business cards, letterhead, applications, etc., we can begin to brand what STEM in Nevada looks like.

There was a brief discussion on STEM license plates, with proceeds going towards scholarships in the next biennium.

Mr. Mitchell commented the STEM Student Recognition Events in both Las Vegas at University of Nevada Las Vegas (UNLV) and at Truckee Meadows Community College (TMCC) in Reno were very successful. They could both be re-tooled to make them even more successful. We need to be clearer on what the event is all about and what we are expecting. There was some confusion on whether it was a competition. It was discussed that these events could be set up more like an expo, where principals of each school recommend the one best project from each school then come together for the best in the school district. Comments were made on the size of the venue at UNLV and the overwhelming turnout of students that showed up. If using the same location, it greatly limits the amount of students that can attend. We need to anticipate an even larger attendance next year. There was discussion on the size of venues at College of Southern Nevada (CSN) as opposed to UNLV and the funding limits available for the event. There was discussion on the application process and changes that need to be made.

There was discussion on making the event into a competition and possibly offering prizes. Possibly sponsors could be involved to donate prize money. The issue of judging was also discussed. The council discussed rather than making it open to anyone who wants to participate to making it a maximum of one team or one project per school. The comment was made that the event is set up to spawn more interest in STEM, the more students the better. The goal is to increase interest. It was agreed the event needs to be set up for getting the most kids with the most projects. It was suggested that applications need to be submitted by teachers only, rather than students, or possibly applications require a recommendation or nomination from a teacher. Suggestions to initiate outreach in advance to schools is one place we could do a better job. Layout of room and venue were further discussed. It was agreed it should be open to anyone, but require a nomination from a teacher with confirmation from that teacher. There was discussion on the title being changed; i.e. STEM Challenge, STEM Expo, or STEM Showcase.

Discussion ensued regarding the need for more business involvement, or partners to attend the event, possibly sponsors. A suggestion for next year included having miscellaneous fun things for kids to experience.

Mr. Mitchell commented on the STEM School Recognition Event that took place at the Governor's mansion. He discussed Arizona, as a model, who created four different videos each showing different levels of STEM schools.

He said he would like to create a video that schools could view to see more of what the review committee is looking for. Perhaps STEM schools already designated, could help with making these videos. It would help in more clearly laying out what the reviewers are actually looking for in a STEM school. The council talked about doing a “kickoff” this next year by making an announcement and advertising more. Applications should be requested earlier so more site visits could be accomplished within the timeframe. Mr. Mitchell said we are expecting more reviewers next year, we have invited the Principals from this year’s STEM designated schools to join us in reviewing this next year. There was discussion to possibly alter the review rubric used by the reviewers in scoring the schools. The important area is for the schools to know in advance the areas they are being judged on.

Kelly asked what the responsibilities are of schools that have now become STEM schools. Mr. Mitchell responded that he reached out to schools that did not become STEM designed schools and offered to pair them up with schools that did receive the designation to have informal conversations principal to principal, and possibly get together, school to school. We have no mandates at this time.

IX. Updates from Subcommittees (For possible action)

Mr. Mitchell thanked all the subcommittee members and said they have all produced some very valuable work products. Their purpose is to assist the STEM Advisory Council with their expertise in each of their fields. It will also be very valuable for each subcommittee to hear what the others are doing, possibly creating more collaboration.

- Computer Science Subcommittee
Mark Newburn, Vice-President of the State Board of Education

Mr. Newburn said the Computer Science subcommittee is basically attempting to create a new core academic subject, Computer Science. The exception is we have none of the infrastructure. The Computer Science subcommittee will serve as the technical experts to advise the State Board of Education and the STEM Advisory Council on what high school courses will be acceptable. Teams have been put together and are scheduled to start writing the standards for computer science next month. We have groups looking at what teacher licensing should look like for computer science, as well. He said some of the courses are structured very differently; they are less about teaching programming language, and more about computational problem solving. The process has also started in developing our own state strategic plan for computer science.

Chair Newburn said the Computer Science subcommittee is very committed. No member has ever build a new academic core subject. He

added that the Computer Science Subcommittee is a member of a 16-state alliance called “Expanding Computer Education pathways.” Currently, Nevada is one of the top four states in the nation making these accomplishments in K-12 computer science. He added that much of what the subcommittee will be doing is implementing the mandates for SB200.

- STEMworks Subcommittee
Brian Mitchell, Director, Governor’s Office of Science, Innovation and Technology (OSIT)

Mr. Mitchell commented that STEMworks is a product of a Washington DC-based, STEM focused, non-profit called “Change the Equation.” They have developed a rubric by which they judge and evaluate different STEM curriculum and professional development. Nevada has a formal partnership with them and we have taken their formal rubric and added some Nevada specific questions. STEM programs will have the opportunity to request they be evaluated and approved to be on the Nevada list of high-quality STEM programs. One of the problems this seeks to solve for many school districts, and with so many programs available, it is very difficult to select a quality STEM program. The idea behind this program, which is in partnership with WestEd, is that we put together a formal Nevada-specific list of STEM programs and have them reviewed. The reviewers will be recruited after receiving some very specific training from WestEd on how to evaluate these different programs. Once this list is published, school districts can choose from evidence-based reviews, high-quality programs that would be most appropriate for them. No program is mandatory for a school to use, it would still ultimately be their own decision. He added he has been in contact with the Department of Education and discussed possible funding as an incentive for schools to get these programs, thereby ensuring the state that the districts are using evidence-based, high quality programs.

Another benefit of this program is we can provide those STEM-programs that do not make the list, guidance and feedback in order for them to re-apply and be considered again. This also gives Nevada-based programs the opportunity to get on a national list giving them an opportunity to expand outside of the state.

We hope to have a list of reviewed, quality programs by either October or November, 2017, so schools can start using that list when they start making there program selections and purchasing decisions in January 2018.

- Integrating Art and Culture into STEM (IACS) Subcommittee
Marisa Cooper, Director of Education at the Sierra Arts Foundation and Tia Flores, Program Director at the Sierra Arts Foundation; Craig Rosen, Desert Research Institute – Science Alive

Ms. Cooper referred to their Report from the IACS Subcommittee which identifies the incredible diversity of organizations represented on this subcommittee. Included are educational arts and organizations from across the state with representation from the Clark County School District, the Department of Education, the Desert Research Institute, Discovery Museum in Las Vegas and Reno, the Nevada Arts Council, Nevada Museum of Art, Sierra Arts Foundation, the Smith Center, the STEM Advisory Council, Sustainable Nevada, Truckee Meadows Community College and Washoe County School District.

Ms. Cooper pointed out that after much discussion, the IACS subcommittee decided their primary focus should be on professional development. By focusing their resources and expertise on supporting teachers in the classroom is where we will have the most positive impact on helping teachers to think about ways to integrate arts and culture into STEM programming. All of these above-mentioned organizations have incredibly successful histories of providing inter-disciplinary arts integrating and STEAM-based professional development across the state. We want to build on that practice and that expertise. This subcommittee hosted a significant portion of hands-on STEAM-based workshops at a collaborative conference in 2015 called "Exploring STEAM Education," in Northern Nevada. The event followed the next year, 2016, and was extended state-wide. Building on the success of the collaborative professional development and these two events, they are looking at rebranding as the "Nevada STEAM Conference," which will continue to be held annually, alternating between Northern Nevada and Southern Nevada. It is a statewide invitation, free to all teachers and will be providing a one-half in-service credit. The date of next year's event is Saturday, February 24, 2018 at the Nevada Art Museum in Reno. They will be offering grant funding to teachers to pay for hotel, mileage and/or airfare up to \$500 for those traveling more than 50 miles. The conference will be hosted by Desert Research Institute (DRI) Science Alive and the Nevada Museum of Art with the support and collaboration of IASC and participating organizations. The topic this upcoming year will be "Nevada's Nuclear Legacy." She said the keynote speaker will be Dr. Charles Falco an experimental physicist at the University of Arizona. There will be a complimentary supplementary activity in the opposite city every year. The upcoming conference will be in Northern Nevada and the complimentary activity will be a site visit in Southern Nevada during the same time-frame.

This group will also be working to establish a statewide definition for "STEAM education within the State of Nevada."

- Community Partnerships Subcommittee
Brandolyn Thran, Executive Director at Open-Gate Foundation

Ms. Thran discussed the Fernley STEM Festival which was successful in bringing in community businesses and organizations making STEM learning come alive outside of the formal and informal settings. The term "Community Partnerships" has a variety of meanings within the state and at first there was concern there might be overlap with this subcommittee and the Informal STEM Learning Environment subcommittee. We had to break apart and make some operational definitions for Community Partnerships, so we can now move forward.

The first thing we worked on was what a community partnership looked like; breaking it into four parts, informal education, formal education, life experiences, and spiritual/family experiences, which all have the purpose of moving "important learners" forward to fulfill their dreams and goals. She said community partnerships can interact on all of these different levels and once we capture the complexity of community partnerships we can then begin to talk about specific types of community partnerships. She pointed out the subcommittee had to assess what a community partnership could be and why it is being done. Sometimes they are only an exchange of dollars between two entities, and not necessarily exchange of knowledge, which often this type of exchange is still valuable. She said this has led us to developing a how-to guide template so we can help both schools and businesses on how to establish this partnership. The guide will show how to engage community partnerships and what that looks like, as well as whether the partnership is adding value to STEM learning. We will be developing a white paper that demonstrates these ideas and we will provide a template on how to build a community partnership.

The second initiative our subcommittee is working on, and we request the active involvement of this council, is pulling together an inventory, by county, of who could potentially be community partners that support teachers who teach the Next Generation Science Standards (NGSS). She added this is the first step in understanding who in the business world and non-educational world, can help support these teachers. She added that many of these community partnerships are built on personal relationships. If we can start to calculate this matrix, by county, and be in alignment with NGSS topics, then our goal is that these contacts could potentially support these teachers and ultimately build a community partnership. This would help to develop a database of businesses for this subcommittee to contact to facilitate community partnerships within all state counties.

Ms. Thran commented this subcommittee will ultimately be involved in educating the business community about the NGSS and how they can

specifically support learning. The purpose is to be adding value to the classrooms.

Mr. Mitchell elaborated on the discussion that this subcommittee should provide a guide for schools who want to develop a community partnership with a business or an informal provider. He said teachers do not always know how to approach a business and ask them to get involved with teaching. It would answer the question of how to start a community partnership or who to consider. It would also be nice to provide that same resource to a business or informal education provider. Often it is difficult to navigate a school system for outside businesses. Ms. Barber commented on “how-to” video commercials and suggested a “what it may look like in a classroom” video could be very helpful giving those community partners a sample view of what it looks like in front of a classroom.

Mr. Mitchell referring to Ms. Thran’s handout “Business – Nevada Academic Content Standards for Science Matrix,” said based on principals in the NGSS, this matrix assists in finding a business that can match up to what that standard is. He suggested it be expanded to include math standards as well, because one of our goals is to integrate math and science. Mr. Brancamp commented that full integration across all subjects is what we are looking for. Ms. Thran commented that a similar matrix could be put together for math standards and engineering specifics. Ms. Kraus recommended looking at mathematical practices rather than individual standards, that way it will cover all of K-12.

- Informal STEM Learning Environments (ISLE) Subcommittee
Aaron Leifheit, Education Director for a non-profit, Outside Las Vegas Foundation and Amy Page, Strategic Planner for the Natural History Museum

Mr. Leifeit said his organization has done science programming and nature programming for approximately 25,000 kids this last year and both he and Ms. Page are informal education educators. Informal education helps kids learn better. He said the subcommittee members include, Andy Hart, Executive Director of the Southern Nevada Conservancy, who provides informal education mostly on public lands. Craig Rosen, Desert Research Institute / Science Alive, provides science programs for pre-K12 educators in science-based environmental education. Jessica Snaman, Outreach Director at Nevada Outdoor School, is the largest informal education provider in Winnemucca. Judy Kraus, an educator in Clark County School District, Kris Carroll, Regional Professional Development for the State of Nevada, located in Southern Nevada and Sean Hill, Sierra Nevada Journeys, a non-profit, in Reno who is the largest provider of informal education in that area.

Our first project we worked on is a white paper titled “Informal Learning in Nevada.” This document is to give everyone a starting place as to who we are, what our field does, why our field is important, how our field contributes to education and what the vision is of what we are trying to do. Ms. Page commented that the vision is in two parts; one, we envision an integration of formal education and informal education, which in Nevada is currently not very systematic. This subcommittee has challenged ourselves to accomplish that goal of integration, and one way to make that happen is within our second goal; holding all informal providers in the state accountable to a higher standard of excellence. These are the two things this subcommittee is hoping to work towards in building a strategy for STEM education. This includes integrating formal and informal education, making them stronger in the state to improve outcomes and create best practices and standards for our formal and informal education community, then to ultimately provide better outcomes for our students.

Mr. Leifheit commented on their next steps, and pointed out they hope this will be supported by the overall STEM Advisory Council. After that, we want to create a logic model or strategic plan, taking goals from the STEM Advisory Council’s strategic plan, related to our community, and take specific steps on how we will meet the goals from that document. We would also like to create “Best Practices” for our own community, specific to Nevada. A discussion on deliberate outcomes in terms of informal education pursued.

Ms. Page said they are looking at “needs-based” populations at schools, and in the community, and how they can contribute to what those needs are. Chair Newburn asked, as they formalize this document, whether they are looking at mapping their activities to state standards and meeting the standards in science and math. Ms. Page replied not necessarily correlating to the standards, as much as supporting the standards. We can easily allow kids to practice without very much change in programs. Focusing on the standards, demonstrates you are in alignment, even if you struggle to get practices in the classroom. With informal education it is so much about doing. She said setting out our “Best Practices,” will require programs that are more active.

X. Discussion of the Future STEM Council Meeting Schedule (For possible action)
Mark Newburn, Co-Chair

Mr. Mitchell commented on one item mentioned today for future meetings, was developing a working group for the Strategic Plan Matrix and a separate working group on the re-evaluation of the Student and STEM School Recognition Events. He suggested those groups get together before another full council meeting. He recommended having only those two items on the next full council meeting agenda. There was unanimous agreement.

The council agreed to look at a meeting in September 2017, giving everyone a chance to get started back at school and have a chance to review their notes from this meeting. Mr. Mitchell said he will send out a Doodle Poll for the second half of September.

- XI. Consider Agenda Items for the Next Meeting (For possible action)
Mark Newburn, Co-Chair

Chair Newburn agreed the agenda items for the next meeting will include discussion on the Strategic Plan Matrix and re-evaluation of the Student and STEM School Recognition Events.

- XII. 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.)
Mark Newburn, Co-Chair

There was no public comment.

- XIII. Adjournment
Mark Newburn, Co-Chair

Co-Chair Newburn adjourned the meeting at 2:34 P.M.