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MINUTES

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

Date and Time of Meeting: January 11, 2017, 3:00 PM

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

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

Chair Newburn called the meeting to order at 3:11 p.m.

Members Present: Mark Newburn; Kelly Barber, Richard Knoeppel, Judy Kraus, Dave Brancamp, Cory Hunt, Christopher Sewell for Kristin Nelson, Camille Stegman

Members Excused: Dr. Anne Grisham, Shelace Shoemaker, Marcus Mason, Rob Elliott, Gerd Poppinga, Mary Frey, Dr. Carl Reiber

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**
Mark Newburn, Co-Chair
Kelly Barber, Co-Chair

Co-Chair Newburn welcomed everyone and acknowledged the inclement weather in the north being responsible for several member's absence.

- IV. **Approval of the Minutes from the November 16, 2016 meeting** (For possible action)
Mark Newburn, Co-Chair
Kelly Barber, Co-Chair

Co-Chair Newburn asked for approval or changes to the November 16, 2016 Minutes. The Minutes had not been reviewed by all members. They can be found on the Office of Science Innovation and Technology (OSIT) website at <http://osit.nv.gov/>. Co-chair Newburn suggested they be reviewed for approval at the next meeting date.

- V. **Review of Draft Strategic Plan** (For possible action)
Brian Mitchell, Director, Office of Science, Innovation and Technology (OSIT)

Mr. Mitchell commented last time the Council convened, the outline of the Strategic Plan was reviewed and there was discussion on formatting and whether or not to leave "Equity and Access" as its own topic or embed it throughout the other topics. He said there were many opinions on taking it out as well as leaving it in. He stated it may get lost in the shuffle if you get rid of it and only embed it into other topics. He said he decided to keep it as its own topic, but embed an "equity" focus throughout the rest of the Strategic Plan. He added this can be changed if necessary. Co-Chair Newburn said he liked it and it did not distract him by having equity emphasized in individual places. Ms. Stegman also like it. Mr. Mitchell said a good time to release this document would be in early February, 2017, along with the start of the Legislative Session. He added several changes were also made to "Priorities, Strategies

and Goals.” He pointed out the Committee could further review and send any changes or remarks via email for implementation if necessary until its release in February. It was suggested the STEM Council Members be listed in the appendix. Mr. Mitchell agreed. Co-Chair Newburn said the bullet point referring to “Teach Nevada,” page 10, one of the goals is “Expand the Teach Nevada program to UNLV.” He pointed out UNLV should not be included, they are doing something different. They are currently going after their own hybrid program based on the National UTeach program, which for them is more cost effective. Mr. Mitchell agreed that calling out individual schools may be too specific for this document. He suggested re-wording the paragraph with “Expand the Teach Nevada program to all universities within the state, both public and private, to look into innovative ways to prepare more STEM teachers.” Co-Chair Newburn further discussed the specific reasons UNLV is approaching this subject differently.

Co-Chair Newburn pointed out with the new Computer Science Subcommittee in place, we are now a stakeholder in computer science. This should be noted under “Implementing Stakeholders,” page 10, Goal 4 Increase Scope, “Strategies.” Mr. Mitchell agreed.

Co-Chair Newburn commented on the matrix and goal specificity. Mr. Mitchell replied new items were quantified within the matrix to be more specific. Mr. Hunt asked what was the benchmark or point of reference used for comparison. Mr. Mitchell replied that data can be requested from the Regional Professional Development Program (RPDP). Co-Chair Newburn said we may have to update this information as we receive new data. Mr. Mitchell commented he applied percentage increases rather than specific numbers indicating students graduating, but could always make this area completely non-specific.

Co-Chair Newburn pointed out the introduction was point-on and really laid out the case for STEM in Nevada.

Ms. Stegman, referred the Committee to page 14, Goal 2: “Strategies” – third bullet point, “Efforts to establish partnerships with STEM businesses should be tracked and reported on as a part of school leaders’ evaluations.” She asked if this is an attainable goal or should it say “tracking” rather than “evaluations”. This way you could still track the information and report it, but not necessarily have to complete an evaluation. Mr. Mitchell pointed out these are only recommendations or suggestions as opposed to everything in this document becoming policy right away. The Committee further discussed the document formatting.

Mr. Mitchell asked that all Committee members review this document between now and the end of January, 2017, and provide any comments or suggestions to him. Ms. Stegman noted on page 10, Goal 3 – “Strategies,” bullet point 2, “Create a teachers’ forum that would serve as a statewide STEM professional

learning community for educators to collaborate on best practices in teaching STEM,” and offered that the National Science Teachers Association (NSTA) would be willing to help in any way possible, if needed. Mr. Mitchell replied he will reach out to her separately to discuss this item further.

Mr. Brancamp pointed out page 11, “Priority 3 Outcomes:” item 2, “By 2020, proficiency on assessments in 5th and 8th grades, and the ACT will improve,” and asked whether this includes reading, math and science assessments or science assessments only. He recommended it read, “By 2020, proficiency on state assessments and the ACT will improve.” Mr. Mitchell agreed there are various changes required and said he would also circulate this document to other interested stakeholders, i.e. school districts and curriculum directors, outside of this Council for their review and suggestions for finalization in February, 2017.

VI. Discussion and Possible Vote on Additional Permanent Subcommittees (For possible action)

Camille Stegman, Member

Ms. Stegman said a working group meeting convened on November 28, 2016 for some of the committees designed over the past several years by the Nevada STEM Coalition. The focus support for these committees was to be a virtual STEM Summit. She explained with funding lacking of almost \$150,000, they were unable to accomplish that goal for now, but still need to find a place for some of the committees and the work they have done so far. She gave an overview of several of the committees. She said one of the committees would be a natural fit to implement into Arts into STEM, which is called the STEM STEAM Committee. The other one is an Informal STEM Learning Committee, which would possibly be a new subcommittee, and the last is a Community Partnership Committee.

She said the Informal STEM Learning Committee has been operating since 2014, with leaders from informal education across the state and they have been working with the Nevada STEM Coalition. This Committee has outlined the creation of an informal STEM learning network and their long term goals are basically to create regional standards and best practices examples for informal education in Nevada, integrated informal education STEM professional learning opportunities into the formal classroom, incorporating informal education STEM field experiences in regular formal classroom and integrating informal instruction material, data and curriculum into the formal classroom. She said informal education includes state parks, non-profit organizations, museums and urban parks. She added informal education is a very important aspect. It is one of the things that kids always seem to find the most interesting. She said she believes this would be an important committee.

She said the youngest of the new committees is the Community Partnership Committee. She pointed out what has been discovered with the Nevada STEM

Coalition and STEM ambassadors is the broad range of levels teachers want for their classroom. She said they may want someone to come into their classroom weekly, do fun activities and talk to the students about STEM or someone that just comes in once and gives a lecture. She said this Community Partnership was born in June 2015 as a workgroup for building community partnerships and they were tasked with developing a framework and to discuss partnerships. She added they will continue to investigate how to establish STEM relationships and mechanisms to encourage those types of partnerships. She said these are the two Subcommittees we are proposing and would like this Council to consider.

Mr. Mitchell commented these two committees, the Informal and the Community Partnership, are working groups of interested people that have been working under the auspices of the STEM Coalition. Similar to the Computer Science Subcommittee, we are considering giving these committees a formal home under this Council. He added the people that are already engaged on these committees would then have a permanent home for their work. He said it would be beneficial to have a wealth of people in subcommittees under this Council to help us continue our successful work, as well as keeping a broad and diverse group of people engaged. This will help to keep the Council working in a unified direction.

Ms. Kraus asked if these committees are only in Northern Nevada and whether Southern Nevada is included. Mr. Mitchell responded these groups were put together with membership based statewide. He said the Subcommittees would be open to anybody and not require them to be officially appointed, as in this Council. He added these Subcommittees would not necessarily be involved in informal STEM learning or implementation of partnerships, but rather be more involved with best practices. Ms. Stegman agreed. She said the Informal Committee in Las Vegas currently includes Craig Rosen with the Desert Research Institute (DRI), Aaron Leifheit with the Outside Las Vegas Foundation, Amy Page at the Natural History Museum, as well as people from the Discovery and Lied Museums as members. Mr. Mitchell said upon creating a subcommittee we could then cohort the existing people over, then add membership to anyone else interested in becoming members. Co-Chair Barber agreed and pointed out we will still have these same individuals doing all the work unless we really make an effort to open membership up to other people in the state who are working towards these same goals. Otherwise it will just continue to be those five people who are working for the STEM Coalition and Community Partnership.

Co-Chair Newburn said this is certainly consistent with Senator Woodhouse's original bill that created this STEM Advisory Council, with the Council being the base and these subcommittees allowing everybody interested to be engaged and communicating throughout the state. Mr. Mitchell said it is important that a member of this Advisory Council be a member of each subcommittee and

without knowing how often they will meet, I feel this would not be an overwhelming amount of extra work for myself or for any member of this Council. The OSIT office will provide structure and administrative support. The Advisory Council will be a place for the subcommittees to bring their recommendations.

Ms. Stegman reiterated the two new proposed Subcommittees being formed are the Informal STEM Learning Environment and the Community Partnership. She added the STEM to STEAM group is already formed and in place, and may coincide with a possible third committee of Arts into STEM. Co-Chair Newburn asked if any Advisory Council Members are currently members of either of these two new Subcommittees or whether any member would be willing to become a member. Co-Chair Barber replied she would be interested in membership with the Community Partnership Subcommittee. Mr. Knoppel asked what the feasibility would be of making this part of our marketing plan as we move forward. He said if we are trying to get people more informed about STEM or STEAM, perhaps we could solicit the expertise. He added the more people statewide that get involved, the stronger the support for education will grow. The Council discussed furthering partnerships with businesses and educators and avoiding overlapping of groups, which ultimately are inefficient and may leave gaps.

Mr. Mitchell said the ultimate goal is the STEM Advisory Council be the central hub for these new Subcommittees. He said if there is an existing infrastructure of people already doing good work we need to bring them in and keep them engaged. Mr. Knoppel added if we are able to develop good models for community partnerships with businesses, they need to understand the seriousness of the nature of what they are committing to, as well as educators understanding the nature of businesses who wish to become engaged in these efforts. There needs to be an understanding and mutual agreement up front. Mr. Mitchell said two things this Advisory Council would bring is the number of those partnerships, which would include businesses that could replace others if necessary, as well as helping businesses to understand the value in participating in these Subcommittees. The Council continued to discuss the building of these partnerships and the need for diversity and more people being involved.

Mr. Mitchell said there is an existing structure in place for a subcommittee for arts and culture, however it is currently vacant. There is authority to have it but there is nothing being done at this time. He recommended we eventually bring other state groups already working in this area over and have them continue their work.

Ms. Kraus said she would be willing to work with the Informal STEM Learning Environment Subcommittee and requested contact information. Mr. Knoppel volunteered to work with the Community Partnership Subcommittee. Mr.

Brancamp commented he could sit on the Community Partnerships Subcommittee.

A motion was made by Mr. Knoppel to accept the formation of the two new Subcommittees, Informal STEM Learning Environment and the Community Partnership. Ms. Kraus seconded the motion. The motion passed unanimously.

Mr. Mitchell said he understands the Open Meeting Law is not completely clear on requirements for these types of subcommittees, because they do not actually take any action. He pointed out these subcommittees will be more advisory groups to this Council without any formal action taking place at their meetings. However, the Office of Science Innovation and Technology (OSIT) typically follows the Open Meeting Law, which basically means an agenda be created and posted containing call-in information for those interested. He added OSIT will provide the agenda, posting and summary minutes for the Subcommittee meetings.

VII. Updates from Subcommittees (For possible action)

- Computer Science Subcommittee- Mark Newburn, Co-Chair
- STEMWorks Subcommittee- Brian Mitchell, Director, OSIT
- Governor's STEM School Evaluation Subcommittee- Brian Mitchell, Director, OSIT

Co-Chair Newburn commented on the Computer Science Subcommittee meeting that took place on January 6, 2017. In December 2016, he, Brian Mitchell, Dave Brancamp, Melissa Scott, and Cindy Chang, a computer science teacher at Palo Verde High School in Las Vegas, attended a convening in Phoenix, Arizona on computer science standards. He said Governor Sandoval has joined the Governors Partnership for Computer Science (CS) which commits the state to adopt the following three things; 1) high quality standards for computer science; 2) funding for professional development; and 3) commitment to teach computer science in every high school. There are no current timeframes on these commitments. He explained because the Governor has committed the state to adopt computer science standards, this Council has taken that as the "green light" to go forward. He said the Department of Education is going to talk to the Council on Academic Standards and ask them to approve the initial process for developing standards in computer science. He said last fall Nevada joined the Expanding Computer Education Pathways (ECEP) alliance, consisting of sixteen states. He said ECEP gives states the ability to apply for Mini-grants. We are in the process of applying for a Mini-grant in the sum of \$25,000 for the development by individuals of the standards in computer science. He added if we receive this approval and the grant funding, we will be ready to start the work on developing state standards for computer science. He said at the convening they also

looked at a state applied computer science plan and bringing the committee up to speed.

Chair Newburn said Next Generation Science Standards (NGSS) developed a framework for computer science last year in which Nevada was a part of that process. He added, with so much interest nationally, there is now a Google Group, which people can participate in who are working on state standards in computer science. He said these will not be career technical standards, but rather Nevada academic standards in computer science. He said they are more formal than career technical standards. These standards will define what every student in Nevada should know about computational thinking. We have a really good solid group of people working on this including people from University of Nevada, Reno (UNR), University of Nevada, Las Vegas (UNLV), legislators, the State Board of Education, Regional Professional Development Program (RPDP), school districts throughout the state, the Department of Education and people from industry who are all highly motivated. He said this is the realization that you are about to create a new core academic subject.

Mr. Mitchell commented on the Governor's STEM School Evaluation Subcommittee. He said they developed a rubric and put it with the solicitation online, which has a deadline for later this month for schools to apply to become a STEM school. He said two overachieving schools have already submitted their applications. He reminded the Council, these schools will submit their applications and he will review them. Schools that look promising will require a site visit, which will include members of this Advisory Council and their expertise to accompany him on the site visits. He added he is also looking at dates in May 2017 on the Governor's calendar for a school recognition day, which will take place at the Governor's Mansion in Carson City.

Mr. Mitchell updated the Council on the STEMWorks Subcommittee. He said he and Dave Brancamp had pulled together a group of people, including some from this Council as well as non-members. He said they had a telephone conference with Claus Von Zastrow, COO and Director of Research of Change the Equation, which is a non-partisan initiative to connect and align efforts to improve STEM learning in the United States. The call included the curriculum directors from Washoe, Clark and Elko Counties, DOE and RPDP. He said they had a conversation to remind the group that STEMWorks is an evaluation tool to vet or investigate different curriculum and different programs which is voluntary on the part of the provider to get a "seal of approval," that you have high quality curriculum. Their rubric was developed in partnership with WestEd, a service that brings learning opportunities, consulting and technical assistance to clients in education and human development. He explained Change the Equation and WestEd would provide a certain number of reviewers, then Change the Equation and WestEd would train these reviewers. Nevada would then open up a solicitation to others with programs that want to be included. After review, Nevada can modify that rubric and add Nevada specific items, but

not remove any items specified by Change the Equation or WestED. This would give Nevada a helpful list of resources for specific school districts and the assistance of what they are looking for, as well as providing confidence they are getting a quality product. He said as mentioned in the Strategic Plan, some of the category funding at the state level for STEM could be tied to purchasing. He added there is an incentive for programs to apply and to be included in this rubric, including the availability of state funding and insuring the funding is spent on high quality programs.

Mr. Mitchell said after that phone call, the committee voted they were all in favor of this program. He pointed out that Change the Equation has also offered to waive their normal fee for this program. He said the only thing not solved with this telephone conference was that Change the Equation recommended us paying a nominal fee to the reviewers. He commented he knows of a variety of qualified individuals that could be used as reviewers and are willing to help vet out these programs with a Nevada specific rubric. He added if this Council is in agreement we can sign a formal agreement with Change the Equation.

A motion was made by Co-Chair Barber to take action as recommended by the STEMWorks Subcommittee to hire Change the Equation, a non-partisan initiative to connect and align efforts to improve STEM learning in Nevada. Mr. Knoppel seconded the motion. The motion passed unanimously.

Mr. Mitchell said he would contact Claus Von Zastrow and bring the STEMWorks Subcommittee back together. The next steps beyond signing the official agreement are to identify reviewers, look at their rubrics specifically to determine if we need to add anything, and finally a period calling for applications and their review.

VIII. Discussion Regarding Locations for STEM Student Recognition Events (For possible action)

Brian Mitchell, Director, OSIT

Mr. Mitchell explained we have two STEM Student Recognition Events, one in the North and one in the South and they are required to take place at institutions of higher education. He said an agreement has already been worked out with Truckee Meadows Community College (TMCC) in the North. In the South, he has been working with Dr. Carl Reiber at UNLV and currently we have a reserved space at UNLV. He said since these arrangements, he has had two other offers in Southern Nevada, both tied to the Las Vegas Science and Technology Festival during the week of May 1st. The concern is setting up a competing event off-site during the festival. He said we have a couple of different options. College of Southern Nevada (CSN) has offered a no-host space. Ms. Kraus suggested the CSN location would be very crowded and congested. She said having it at UNLV is not competing, but rather enhancing. She added the festival goes on all week and has events throughout the Las Vegas area at many different locations. Mr. Mitchell commented the Southern

Nevada STEM Student Recognition Event would be on Monday, May 1, 2017 and in Northern Nevada on Tuesday, May 2, 2017. He mentioned he had spoken with Desert Research Institute (DRI) and they had offered to share their space during their “Star Wars” event. He added he did not believe that would fit with this recognition event. The Council continued to discuss locations and dates and agreed that UNLV will work best for the selected date in Southern Nevada.

IX. Update on the Year of STEM (For information only)
Brian Mitchell, Director, OSIT

Mr. Mitchell informed the Council on his successful school site visits during the month of December, 2016, on the topics of computer science and mining. He said phase two of the STEM website (www.stemhub.nv.gov/) is almost done, which will have some exciting new features. We are adding an assessment to assist kids in narrowing down STEM career options, and a Beta-version of a teacher forum will also be available. He asked for Council members to review and give their feedback on the teacher forum, specifically for any changes.

Mr. Mitchell commented on meetings he had in Las Vegas with the Urban Chamber of Commerce and the Urban League and the on-going community partnerships interested in STEM.

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

Mr. Mitchell discussed with the Council the upcoming year’s schedule for the Council and how often meetings should be scheduled. He explained that in Carson City, it gets extremely busy with the Legislature in session and with Southern Nevada, student testing, end of year events and competitions also complicate available dates for meetings. He suggested In-Person meetings calendared in the summer may work best for most schedules. He added In-Person meetings are valuable but difficult to schedule. Ms. Kraus suggested June rather than July, due to the short summer vacation and early start time next school-year. It was discussed it is not necessary for this Council to meet every month, especially with several Sub-committees in place. It was agreed to do what is most productive for the Council. Mr. Mitchell agreed the next meeting will be scheduled in early April, 2017, and the following meeting in June, 2017. He will send out a pole to all members of the Council via email for available dates.

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

Mr. Mitchell commented school visits for STEM Recognition will be completed by the next meeting of this Council. He suggested the evaluations and reports

from those school visits be an agenda item. Another item would be to finalize events for the different recognition events. The Council suggested that reporting from future Subcommittee meetings be an agenda item. Mr. Mitchell said he would coordinate and assist with all future Subcommittee meetings. Co-Chair Newburn suggested any members with additional agenda items for next meeting are welcome to email those suggestions to Brian Mitchell.

- 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.)

There was no public comment.

- XIII. **Adjournment**

Co-Chair Newburn adjourned the meeting at 4:40 p.m.