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

Date and Time of Meeting: November 16, 2016, 3:00 PM

Place of Meeting: Nevada State Library and Archives  
100 N. Stewart Street, Conference Room C (2<sup>nd</sup> Floor)  
Carson City, NV 89701

This meeting will be video conferenced to the following location:

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

**MINUTES**

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

Mr. Newburn called the meeting to order at 3:00 pm. He will run the meeting today.

Members Present: Camille Stegman, Judy Kraus, Kelly barber, Mark Newburn, Richard Knoepfel, Dave Brancamp, Dr. Carl Reiber, Cory Hunt, Kristine Nelson

Members Excused: Dr. Anne Grisham, Marcus Mason, Shelace Shoemaker

Guest Present: Teruni Lamberg, PhD, Peggy Lakey

Staff Present: Brian Mitchell, Jodi Bass, 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. He said a lot is going on especially in the computer science phase. He spoke about his recent attendance at a national summit in Washington D.C. as part of the Expanded Computing Education Pathways Alliance (ECEP).

**IV. Approval of the Minutes from the October 12, 2016 meeting** (For possible action)

Mark Newburn, Co-Chair

Kelly Barber, Co-Chair

Mr. Knoepfel made a motion to approve the minutes of October 12, 2016. Ms. Kraus seconded the motion. The motion passed unanimously.

**V. Update and Discussion about STEM initiatives in the 2017 Legislative Session** (For information only)

Senator Joyce Woodhouse

Mr. Mitchell congratulated Senator Woodhouse on her recent re-election and thanked her for attending the meeting. He pointed out she is the biggest STEM champion in the legislature and was instrumental in the creation of the STEM Advisory Council. Mr. Mitchell invited her to give the Council a preview on the upcoming Legislative session and describe how the STEM Advisory Council can continue to move its STEM initiatives forward.

Senator Woodhouse congratulated the Council on the work they are doing and the progress made. She said she will be Chairing the Senate Finance Committee this year, her Vice-Chair is Senator David Parks. She added that in preparing the Advisory Council's budget and going forward, she would like to be kept in the loop as to what is needed, particularly regarding funding for the Council to go forward. She said she currently has a bill draft request (BDR) dealing with computer literacy and computer science, which is part of the same

effort pursued during the last legislative session, and believes it is a better plan this time around. She said Chair Newburn is also the Chair of that committee. Senator Woodhouse pointed out that Mr. Newburn has attended a number of conferences and has provided a framework of that BDR for the Legislative Council Bureau (LCB) legal staff's review. Mr. Newburn gave a brief overview of Senator Woodhouse's BDR regarding K-12. He said additional items including national initiatives asking states to adopt more rigorous standards in computer science were added. He said there is a national framework for computer science that sets the basic framework for what all kids should know in K-12. Nevada was one of the fourteen states that participated. He pointed out that standards in computer science will probably have associated costs for the state. He said one of the other elements of the initiative is to fund professional development for training of computer science teachers, and a third item includes high schools offering at least one rigorous class, like computer science principals. Senator Woodhouse reaffirmed she will continue to work with Mr. Mitchell and the Council into the next Legislative session.

Mr. Newburn pointed out that the Council needs to identify some of the current funding mechanisms for block grants including current technical education and the Great Teaching and Leading Fund. He said the Council should be familiar with these grants and their current funding mechanisms that offer professional development or other efforts to support STEM. Mr. Mitchell said funding areas in the Governor's budget last Legislative session included the College and Career Readiness Grant and the Great Teaching Leading Fund. He added with the Great Teaching and Leading Fund, the State Board of Education decides what to focus those funds on regarding professional development. He said in the last few years the focus has been on Next Generation Science Standards (NGSS) implementation. He pointed out these funding sources are in the Governor's budget and the Council should be aware of them. Mr. Mitchell commented the Council has had previous discussions about the Every Student Succeeds Act (ESSA) and added there is significant new flexibility within the state and federal money coming in. He said currently STEM is one of the eligible uses of funding for a much greater amount of money than in previous years. Chair Newburn agreed that all available funding streams need to be identified.

#### **VI. STEM Funding in the Every Student Succeeds Act**

Camille Stegman, STEM Coordinator Storey County Public Schools,  
Executive Director of the Nevada Science Teachers Association

Ms. Stegman commented much of her information on STEM funding in ESSA comes from the National Science Teacher Association (NSTA) and the STEM Education Coalition (SEC) as to what they are doing at a federal level. She was placed on a Teaching and Leading Title II discussion group, which advises either the Governor or the State Board of Education of how funding should be spent. She said to keep STEM in the forefront of available funding coming from

ESSA and making sure Title II funds are used for professional development includes developing teachers in STEM content areas as well as developing STEM leaders and mentors. She added they are very focused on the equity issue.

She said Title II funding could also be used to expand, establish and improve alternative certifications for STEM teachers, as well as providing differential pay and other incentives to recruit teachers and retain them in math and science. She pointed out that in Title IV, Part A funding, which is specific to providing students with a well-rounded education, supporting a safe and happy environment and supporting the use of technology in schools, funds could also be used for increasing high quality STEM courses, increasing access to STEM for under-served and at-risk students, especially in rural areas. It could support students in non-profit STEM competitions, hands-on learning opportunities in STEM, integration of other academic subjects including the arts into STEM programs, creation and enhancement of STEM specialty schools, expansion of environmental education and integrating classroom before and after school programs and informal STEM instruction. She said two other areas that state leaders could focus on in STEM include utilizing science assessments and outcomes as part of our state accountability system using the U.S. Department of Education Title I funds to create or improve science assessments. Mr. Brancamp said the Council needs to make sure they are pushing the school districts to be aware of those Title funds. Chair Newburn asked whether the Council should have a role making sure school districts go after this funding for STEM. Mr. Mitchell remarked that in the past No Child Left Behind (NCLB) was very prescriptive on how this funding could be used. He suggested that Council members get together and assemble a plan or information packet that could be distributed to school districts explaining what options they have in regards to STEM funding. Mr. Mitchell asked Mr. Brancamp and Ms. Stegman to assist in putting together some ESSA related STEM materials. They agreed.

**VII. Overview of the Nevada Math Project, STEM Professional Development, and Starting a STEM Principals Academy (For information only)**

Teruni Lamberg, Ph.D, Associate Professor of Elementary Mathematics Education, K-8 and Director, Lemelson STEM Master's Program at the University of Nevada, Reno

Dr. Lamberg said she and Peggy Lakey, M.S., Co-Director, are part of the Mathematics and Science Partnership (MSP) Grant and are in their third year. She said currently research is being done on how to effectively integrate math and science into STEM. Over the course of three years they have impacted over 340 teachers and over 12,000 students with this project. She said they have created a statewide effort to bring school districts together. All three Regional Professional Development Programs (RPDP) and Nevada Department of Education have helped shape it. She said they have formalized this partnership and developed it into a permanent initiative of University of

Nevada, Reno (UNR) and their goal is to get funding down the road and be an initiative focusing on math education by using science as a context to teach math. The goal is to go after funding from the National Science Foundation and other sources to build on this partnership. Dr. Lamberg discussed the Nevada Mathematics Project, which is a collaborative statewide mathematics initiative to improve math and science instruction and student achievement in Nevada.

She said they are currently supporting over 140 teachers from the State of Nevada to improve math instruction and develop math and science leaders this year. Over the past three years this project has directly impacted approximately 12,600 Nevada students. Over time, as teachers continue to implement these strategies and knowledge, many more students will be impacted. She said these teachers represent every single school district in Nevada including several charter and private schools. She pointed out their long-term goal is to transform Nevada and learn from that process. This project is funded through the Nevada Department of Education with federal funds from the U.S Department of Education. She said the initiative works within the education system of Nevada, and collaborators include the Nevada Governor's Office of STEM Education, the Nevada Department of Education, Nevada Regional Professional Development Programs, all Nevada school districts, national industry partners (RHK Technology, Mathematical Reviews), and experts at other top national research universities (Northwestern University, University of Wisconsin-Madison, Central Connecticut University, and University of Nevada, Las Vegas). She suggested the Council visit their website at [www.unr.edu/education/centers/nevada-mathmatics-project](http://www.unr.edu/education/centers/nevada-mathmatics-project) for more information. Chair Newburn asked about the STEM Principals Academy. Dr. Lamberg responded they are trying to figure out what format of professional development (PD) would work best to incentivize principals to participate. She added that an effective way to support principals is to find out what their needs are and design something based on those needs. Chair Newburn asked whether this project was in development. Dr. Lamberg responded it is in development. Dr. Lamberg said she would like to link up with the Council's strategic plan and isolate professional development that builds a body of knowledge, leadership and networks where information can spread and at the same time develop principals and leaders.

Mr. Mitchell thanked the representatives from UNR and commented on the Principal STEM Academy and how important it is having these type of STEM professional development opportunities at different levels. The hope is to build up these programs strategically and can train people that will have an impact. Dr. Lamberg added they do have approaches that would improve instruction that effects student achievement. She said partnering is the exciting part of this program, making it more powerful.

Mr. Mitchell remarked he and Melissa Scott of the Nevada Department of Education, recently spoke at a NASA Conference in Las Vegas, wherein he gave an update on the Year of STEM and some of the initiatives being done as a STEM Council. He said Ms. Scott gave a presentation on where the Council is heading in computer science and gave an overview of framework and legislation. The Council discussed ways they could encourage school principals to engage in STEM. Mr. Mitchell said this is an opportune time for the push of STEM to school principals, as they now have the autonomy of charting their own funding course.

**VIII. Update on the Year of STEM- Marketing Plan (For possible action)**

Brian Mitchell, Director, Office of Science, Innovation and Technology (OSIT)

Mr. Mitchell said the Year of STEM has been going well. He discussed a recent school visit to Advanced Technologies Academy (A-Tech), which included the Las Vegas Chamber of Commerce, a representative from Farady Future along with alumni from A-Tech. Mr. Mitchell said he is looking toward next month and focusing on the STEM topic "Mining and Computer Science." He is working with the Nevada Mining Association to put together events in rural Nevada and also working to put together events in coding and computer science. He said incremental improvements have been made to the STEM website, to include new content and a new blog post. Phase two will be done by the end of the year. At that time there will be a short 10 question assessment for students to take to help narrow down potential careers. He said there will also be a teacher forum coming on line and an option of employers posting jobs to the site. Marketing will begin after the holidays due to the expense. He added that part of the marketing strategy is to contact students through social media with targeted advertising to get students, teachers and parents more interested in the website. He said next month there will be an announcement that the Governor has joined the Governors for Computer Science (CS) Partnership.

**IX. Review of Draft Strategic Plan (For possible action)**

Brian Mitchell, Director, Office of Science, Innovation and Technology (OSIT)

Mr. Mitchell said he has received much more feedback on the draft Strategic Plan this time around. He added he had hoped to finalize it today, but believes it requires additional contemplation. He pointed out that the Council's comments had been aggregated into (Attachment A) "Priority: Interest and Awareness". He said he also received an additional response that included changing the entire structure (Attachment B) "Stem Strategic Plan Outline 4.E.A". He said it included, rather than "Equity and Access" being its own separate goal, infusing "Equity and Access" throughout the document and be added to each goal and strategy within those goals.

Mr. Mitchell said one question is whether to stay with the four priorities “Interest and Awareness,” “Quality and Scope,” “Equity and Access,” and “Alignment and Engagement” or remove “Equity and Access” from being its own category by infusing it throughout the document without it being its own explicit goal. The Council discussed the two different plans. The Council decided the order of Priorities for the Draft Strategic Plan would be “Equity and Access” first, “Quality and Scope” as the second, “Interest and Awareness” as third, and “Alignment and Engagement” as fourth priority.

Mr. Mitchell commented a recommendation was made to increase the length of the school day to facilitate more STEM. The council decided that would be very costly and beyond this Council’s duty.

The Council discussed offering a certificate or goal for STEM. Ms. Stegman asked whether acknowledgment of a teacher being capable of teaching science, technology, engineering and math or being capable of integrating STEM well and effectively was the goal. She added a certificate or endorsement for STEM is not just for teaching science, technology, engineering and math as subjects, but rather being trained to teach in an integrated manner. Ms. Kraus asked what it does for a teacher who gets a STEM endorsement. Mr. Mitchell suggested they table this topic for further review.

The Council discussed offering a recruiting bonus for STEM endorsement teachers entering the School District, or offering a recruiting bonus for teachers with that skill set. Ms. Stegman commented there is funding currently available through ESSA for recruiting bonuses.

The Council discussed the term “three-dimensional learning.” The idea behind three-dimensional learning refers to the three pillars that support each standard, which are science and engineering practices, crosscutting concepts and disciplinary core ideas. Chair Newburn commented “three-dimensional learning” should be replaced with “integrated” within the document. The Council unanimously agreed.

Mr. Mitchell brought the Council’s attention to Goal 4:” Increase Scope, Allow Computer Science to count as a science requirement for graduation.” He referred the Council to the comment “implementation of NGSS does not align to this”. Chair Newburn suggested they change it to count as a requirement towards graduation and leave open for the graduation committee to decide. The Council unanimously agreed with Chair Newburn.

Mr. Mitchell asked for comments on Goal 2: “Increase STEM education, workforce development and economic development coordination and cooperation amongst state and local government, higher and K-12 education, business, and other stakeholders,” comment 36, “Expand the STEM Coalition’s STEM Ambassador program and increase mentorship opportunities.” Mr.

Knoeppel said commitment is an issue. Ms. Kraus believes we need to expand as much as possible and we need more mentorships. It was unanimously agreed by the Council this item should stay in the document.

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

Brian Mitchell, Director, Office of Science, Innovation and Technology (OSIT)

Mr. Mitchell said he has reached out to the University of Nevada, Las Vegas (UNLV) and Truckee Meadows Community College (TMCC), because of the requirement to have one STEM Recognition Event in the North and one in the South at an institution of higher education. We are probably looking at an April or May timeline and asked what time of day would be most appropriate. The consensus was evening. He also asked if UNLV and TMCC were agreeable locations with everyone. The committee unanimously agreed they were.

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

Chair Newburn said this item can be discussed via email by the Council.

**XII. Next Meeting Date will be determined at this meeting. The meeting will be video conferenced between the Library and Archives Building, Second Floor Room C, in Carson City and the Grant Sawyer Building in Las Vegas.**

Mr. Mitchell commented the next meeting, which is an “in-person meeting” and will take place on January 11, 2017 at 3:00 PM in Las Vegas. He pointed out there will be an opportunity to dial in via teleconference if unable to attend. Ms. Kraus asked whether the Council needs to meet prior to get the Strategic Plan finished and approved through the Legislature. Mr. Mitchell said the Council may need to participate in a telephone conference call in December, 2016, rather than have a full meeting. He said he will send out the new Draft Strategic Plan to each Council member followed by a brief telephone conference in December, 2016 for final approval by the Council.

**XIII. 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 in Las Vegas or Carson City.

**XIV. Adjournment**

Chair Newburn adjourned the meeting at 5:34 P.M.