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Governor

STATE OF NEVADA

GOVERNOR'S OFFICE OF SCIENCE, INNOVATION & TECHNOLOGY

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Brian L. Mitchell
Director

PUBLIC MEETING MINUTES

Name of Organization: STEM Advisory Council
Date and Time of Meeting: Tuesday, January 30, 2018 @ 3:00 P.M.
Place of Meeting: Nevada State Library and Archives
Boardroom (First Floor)
100 North Stewart Street
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

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

North: 775-687-0999 or
South: 702-486-5260
Access Code: 70987 push #

I. Call to Order / Roll Call:

The STEM Advisory Council was called to order by Co-Chair Mark Newburn at 3:15 P.M. on January 30, 2018, at the Grant Sawyer State Office Building, Suite 5100 in Las Vegas, NV. He will be running the meeting today.

Members Present:

Mark Newburn
Kelly Barber
Camille Stegman
Carl Reiber
Dave Brancamp
Judy Kraus
Richard Knoeppel
Shelace Shoemaker

Members Absent:

Marcus Mason
Cory Hunt
Christopher Sewell

Guest Present:

Cindi Change – Computer Science Subcommittee
Aaron Leifheit – Informal STEM Learning Environments (ISLE) Subcommittee
Brandolyn – Community Partnerships Subcommittee
Aimee Allen – Integrating Arts & Culture into STEM (IACS) Subcommittee

Staff Present:

Brian Mitchell
Debra Petrelli

II. Public Comment:

There was no public comment.

III. Welcoming Remarks:

Co-Chair Mark Newburn, Co-Chair Barber

Co-Chair Newburn welcomed everyone. Co-Chair Barber said she was excited to hear updates from all the Subcommittees today and thanked everyone for working so hard.

IV. Approval of the Minutes from the July 7, 2017 and September 18, 2017 Meetings:

Co-Chair Mark Newburn

Co-Chair Newburn asked if there were any corrections to the July 7, 2017 or September 18, 2017 Minutes as written. None were made. Dr. Carl Reiber made a motion to approve the Minutes of July 7, 2017, as written. Camille Stegman seconded the motion. The motion passed unanimously. Dr. Carl Reiber made a motion to approve the Minutes of September 18, 2017, as written. Richard Knoepfel seconded the motion. The motion passed unanimously.

V. OSIT Update: (For information only)

Brian L. Mitchell, Director of the Nevada Governor's Office of Science, Innovation and Technology (OSIT)

- STEM Teacher Forum and Website Update
- STEM K-5 Grant Update
- STEM Teacher of the Year and Recognition Events Update

Mr. Mitchell commented on the Nevada STEMHub website change and said the Nevada Teacher's Forum infrastructure is up and running which, after some testing, appears to be doing well. He said some changes have been made based on feedback. He said the next step is to have teachers post some example content before the site goes live statewide.

Mr. Mitchell updated the council on the K-5 STEM Education grants that OSIT was recently awarded for STEM programs in elementary schools. He thanked the members that assisted in the review of those applications and helped to make the award decisions. He said they awarded \$134,000 in funding to five school districts and two charter schools. He added those funds will go to twenty-five different elementary schools and impact about 5,000 students. He said OSIT is contracted with the Raggio Research Center at University of Nevada, Reno (UNR) to conduct an evaluation of the funding and the elementary-level STEM grant program. He added that the evaluation will be used to improve the way funding is awarded in the future and if the results are positive, use it to further invest in elementary-level STEM programs throughout the state.

Mr. Mitchell said the STEM Teacher of the Year award was previously discussed at the STEM Advisory Council's September 2017 meeting. He referred the council to his handout which included an informational outline and an application form for STEM Teacher of the Year. He said teachers must be nominated by their school principal. Once they are nominated, the teacher will fill out a brief application and submit it. He said once the applications are received, they will be evaluated and the selections will be made. He said there will be three teachers in Northern Nevada and three teachers in Southern Nevada selected; with one each in elementary, middle and high school. He said the teachers will be announced at the Student Recognition Events in both the north and south, with a presentation of a monetary award of \$1,000 to each teacher to use for their classrooms. He commented on his outreach to industry partners for this event and said he has received commitments from five sponsoring companies for these awards. He said he is currently looking for one more sponsor. He expects to send out the information and application very soon to principals so they will have time to nominate their teachers prior to the Student Recognition Events in the spring of 2018. He requested the council members to review and give feedback on the application.

Mr. Mitchell updated the council on the upcoming Student Recognition events. He said a change in the Northern Nevada venue has been made to a different campus at Truckee Meadows Community College (TMCC). It will be hosted this year at TMCC, Edison Way campus, also in Reno. He added that this location is where all of TMCC's STEM programs are housed, with the exception of healthcare. He said there will be college professors and college students in attendance to interact with the recognition students, as well as an opportunity for the students to take a look at the school's robotics equipment, drones, HVAC and other manufacturing programs. He added that Washoe County School District has graciously lent the use of their parking area located across the street from the venue. He said the Northern Nevada Student Recognition event will be May 2, 2018, at 4:30 p.m. He said last year the event in Southern Nevada was held at UNLV. He commented that with space restraints and the anticipation of more students participating this year he has inquired into other venues in the area. He said he contacted the College of Southern Nevada (CSN), Cheyenne campus in North Las Vegas, and they offered several spaces, giving us more room with no set-up or facilities fees and said we can bring in our own food and beverages. He added this would also be a good opportunity for CSN to show-case their college and the STEM programs they offer. He asked the council for approval to move the event to CSN this year. The council agreed it would benefit the event. Mr. Mitchell said the date for this event is April 30, 2018.

Mr. Mitchell commented on the STEM School Designation event process. He said this year a STEM School Action Guide was put together as a useful resource for schools applying for the

designation, and can be found on the OSIT website:

http://osit.nv.gov/STEM/Gov_Designated_STEM_Schools/. He said the application deadline is March 15, 2018, and after a staff review of the applications, we can decide at which schools we will conduct our site-visits. He added this year we will have reinforcements, as the designated STEM schools from last year have agreed to help with the evaluations and site-visits. He said the site-visits will be scheduled in late-March and early-April, with the council making their decisions in late-April. He said the STEM School Designation event will take place again in Carson City at the Governor's Mansion, but no firm date has been selected at this time.

VI. Subcommittee Updates (For possible action)

- Computer Science Subcommittee – Cindi Chang, Mark Newburn

Ms. Chang updated the council on the Computer Science Subcommittee. She said the K12 Computer Science Standards have been reviewed by the Academic Standards Council and State Board of Education (BOE) with very good remarks, where they have passed through to a regulation workshop, so school districts can begin to form curriculum decisions based on those standards. They can be found on the BOE's website at: http://www.doe.nv.gov/Standards_Instructional_Support/Nevada_Academic_Content_Standards/. She commented on Senate Bill 200 (SB 200) funding allocations, which award school districts funding for computer science. The purpose of SB 200 is to provide education and training to teachers in the classroom who will be teaching computer science to their students. She said teachers need that professional development (PD) in order to be successful in computer science moving forward. She added the subcommittee is currently putting together a frequently asked questions page with an overview of the bill to assist school districts, which will also be added to the BOE website upon its completion. She also commented on their PD partner, The Regional Professional Development Program (RPDP) and training that will be provided to teachers on the new computer science standards. She said the subcommittee has also reviewed licensing endorsement changes and updates that need to take place, which are currently awaiting to go before the Commission on Professional Standards (COPS) Board. She announced the subcommittee's upcoming Statewide Computer Science Summit will kick off the new computer science standards and initiatives throughout the state. It will take place on June 18, 2018 at UNLV from 9:00 AM through 4:00 PM. Co-Chair Newburn said funding for the Summit came from Nevada's partner, Expanding Computing Education Pathways (ECEP) Alliance, from whom a \$15,000 grant was awarded for the development of the state computer science standards. He added that a follow-up grant of \$5,000 was received to hold the statewide Computer Science Summit. He also commented that The National Association of State Boards of Education had a webinar on expanding computer science in K-12, led by Code.org and they had asked Nevada to participate as the exemplar state in the country for our work with computer science standards. Aimee Allen, Chair of the Integrating Arts & Culture into STEM (IACS) subcommittee asked for more information on RPDP and The College Board training for Advanced Placement (AP) Computer Science Principal. Ms. Chang said the training RPDP is doing in connection with The College Board, is on AP Computer Science Principal curriculum through Code.org. She added they are also doing training for middle school teachers for Computer Science Discoveries and elementary school teachers on Computer Science Fundamentals, with all training at no cost to teachers.

- Community Partnerships Subcommittee – Brandolyn Thran, Chair

Brandolyn Thran, Chair of the Community Partnerships subcommittee said they had been working on a Community Partnership Manual. She said the difference between this subcommittee and the Informal STEM Learning Environments (ISLE) subcommittee is discussed in the manual. The focus of the ISLE subcommittee is how to define a successful informal learning program, and how that learning occurs. The Community Partnerships subcommittee is focused on how to establish partnerships to support learning, and how to evaluate partnerships to ensure they are meaningful. She added that many established community partnerships are highlighted in the manual. She encouraged members of the council to provide her with additional partnership information they would like to see highlighted in the manual. She said another piece in the manual the subcommittee is currently working on includes defining different types of community partnerships, giving people information on expectations and what the partnership might look like. She said another section recently added is on academic standards and how understanding them strengthens community partnerships between education professionals and industry experts. She said another section of the manual discusses how to go from an industry to an education perspective and the steps to go through to form those partnerships, as well as from education to an industry perspective. She said the last section, Rubric for Partnership Evaluation, discusses how to evaluate a community partnership and confirm that it is performing as expected and is benefitting students and teachers. She said they hope to provide a template that can be modified for any particular partnership to be used as an evaluation tool. She added the subcommittee's goal is to have this manual completed in early spring 2018. Mr. Mitchell suggested if any council members have information on community partnerships they would like included in the manual to forward that information to OSIT, c/o Debbie Petrelli at dpetrelli@gov.nv.gov.

- Integrating Arts & Culture into STEM Subcommittee (IACS) – Aimee Allen, Chair

Aimee Allen, Chair of the Integrating Arts & Culture into STEM (IACS) subcommittee said the subcommittee feels that teachers, informal educators, etc., could really benefit from a working definition of what STEAM means, what it looks like, and what the guiding principles are that essentially make up a STEAM curricular lesson. She commented that IACS is providing support to and has partnered with the Nevada Museum of Art and the educational outreach program ScienceAlive at Desert Research Institute (DRI) and the NV STEM Conference, which is taking place on February 24, 2018, with a one-half credit PD opportunity for teachers. She said keynote speakers include Dr. Charles Falco, Chair of Condensed Matter Physics, Professor of Optical Sciences, Professor of Physics at College of Optical Sciences at the University of Arizona, and Robert Beckmann who is a visual artist and educator. She asked that a link to the NV STEM Conference be sent to all members of the council from OSIT and requested feedback from everyone. She said IACS has been working on a position paper and are about to engage the community directly by introducing a draft of the paper at the NV STEAM Conference during a workshop to work openly with teachers and request their feedback. She asked that a link to the IACS Position Paper be sent from OSIT to members of the council. Mr. Mitchell pointed out that IACS will be bringing their position paper before the council once they have accumulated and integrated all the feedback from the conference for a formal endorsement.

- Informal STEM Learning Environments Subcommittee (ISLE)- Aaron Leifheit, Co-Chair

Discussion and Possible Vote to Endorse the Informal STEM Learning in Nevada Concept Paper.

Aaron Leifheit, Co-Chair of the Informal STEM Learning Environments (ISLE) subcommittee's commented on their Concept Paper, entitled "Informal STEM Learning in Nevada," which was originally presented to the STEM Advisory Council in July, 2017 and again presented today. He said the draft presented contains a brief vision for informal STEM learning in our state along with guiding principles and informal STEM learning strengths. He commented that ISLE received several comments and opinions from the council back in July, 2017 and those comments and suggestion were integrated into today's handout. He said since July 2017, this document circulated for several months to different groups around the state, i.e. GREENevada, a collection of formal educators in Northern Nevada, to Connecting Hands Offering Lifelong Learning Adventures (CHOLLA), a group of informal educators in Southern Nevada. He said most informal STEM providers that our concept paper has gone to for review are non-profits, museums and parks. He said ISLE is very happy with the paper they present today for endorsement by the STEM Advisory Council to be used in recognition and in support of informal STEM learning in Nevada. Mr. Mitchell commented that an endorsement or ratification by the STEM Advisory Council will reflect the official position of the council on that topic. He said the ISLE Concept Paper represents a lot of work by this subcommittee and concurred with Mr. Leifheit on the number of revisions this document has gone through. He added it is the goal for this document to be approved by the STEM Advisory Council then the ISLE subcommittee can go out and use it in their efforts to both grow and improve the work of informal STEM learning throughout the state. Chair Newburn asked for discussion on the ISLE's concept paper. Ms. Stegman asked whether there would be a way for evaluating, possibly a rubric, to help gauge whether an informal STEM program was worthwhile and followed the guidelines within the document, and if so, would that piece be separate from this. Mr. Leifheit replied that is the next step for the ISLE subcommittee. He said ISLE is currently identifying best practices for informal education with more specificity of the themes in the ISLE concept paper. He said they are creating a rubric for best practices of informal education, which will allow them to measure how we are doing and what we still need to address. It was noted there are typographical errors within the document. Mr. Mitchell commented this vote of the STEM Advisory Council is to approve the essential content of the document. The council agreed.

Judy Krause made a motion to endorse the Informal STEM Learning in Nevada concept paper with typographical edits to be made. Kelly Barber seconded the motion. The motion passed unanimously.

VII. Discussion and Possible Vote to Endorse the Priority Features of NGSS White Paper (For possible action)
Camille Stegman

Ms. Stegman commented there is a typographical error on page 1 of the Priority Features of NGSS-Aligned Instruction Materials. She went on to say this paper was a collaboration between the western states that have accepted the Next Generation Science Standards (NGSS),

also known as the Nevada Academic Content Standards. She said because California, as an early adopter, struggled to get decent instruction materials, they were prompted to create a memo to the California Department of Education. She said that memo turned into this white paper and was endorsed by California, Nevada, Oregon and Washington, as well as the National Science Teachers Association (NSTA) and several other industries including the organization Achieve. She commented this white paper basically includes recommendations to publishers, reviewers and educators. She said this document was passed out to the council, in a draft form, several months ago for review, however no vote to endorse took place. She said it has been distributed to the Department of Education, as well as the Council of Chief State Science Officers, State of Washington Office of Superintendent of Public Instruction Science Director and the Oregon legislature. Co-Chair Newburn commented the Department of Education has a role in adopting textbooks, however this appears different. He asked how the STEM Advisory Council's role is different than the Department of Education in adopting this document. Dave Brancamp, Superintendent of Public Instruction, Nevada Department of Education, said the current pathway for material being adopted, is that school districts do the review and bring it to the Department of Education where a final review takes place before going to the State Board of Education. He added that from the Department's standpoint it is always going to be based on whether it matches the Standards and how well it deals with diversity and ethics, and is evidence based. He continued to discuss the different tiers used for alignment with the Standards by the Department of Education. Co-Chair Newburn asked whether this document is consistent with the approach by the Department of Education. Mr. Brancamp replied there is nothing in the document that the Department would be opposed to, it is just not in a current rubric that can be matched to other content areas. There was further discussion by the group on the ethical component within the document.

Camille Stegman made a motion to endorse the Priority Features of NGSS-Aligned Instructional Materials with typographical edits to be made. Dave Brancamp seconded the motion. The motion passed unanimously.

VIII. Presentation, Discussion and Possible Vote Regarding Restructuring the STEM Advisory Council Meeting Schedule and Adding Additional Subcommittees (For possible action)
Brian L. Mitchell, Director, Governor's Office of Science, Innovation and Technology

Mr. Mitchell discussed the progress and accomplishments made over the last year by the STEM Advisory Council and suggested, in moving forward, that the STEM Advisory Council adopt additional subcommittees. He said by adding subcommittees, this council could be more efficient in providing strategic direction and endorsements. He commented on other state's STEM Councils and how some serve more as an executive body, meeting only two to three times a year. He added it is difficult, as a council, to accomplish the many tasks in the time we have available to us. He proposed to the council that the number of meetings of the STEM Advisory Council be reduced to two or three meetings per year and they create five new additional permanent subcommittees with very specific charges to include at least one member of the council on each subcommittee. He pointed out this would benefit the council in allowing members to dig deeper and do additional work; and secondly, bring more people into the fold by engaging them in the work we are doing, and ultimately reducing some of the workload of our current members. Mr. Mitchell proposed five new permanent STEM Advisory Council Subcommittees, as follow:

Survey Subcommittee

- a. Rationale: The Council is required to conduct surveys in NRS 223. Priority 3 Goal 1 of Strategic Plan.
- b. History: In 2016, the Council conducted a statewide survey of teachers, businesses, parents, students, and administrators regarding STEM resources and barriers. There is need to update the survey.
- c. Charge: Subcommittee members would develop and make recommendations for new surveys and assist OSIT in reviewing and analyzing the results. Survey data would be used by other subcommittees and the Council in carrying out their duties.
- d. Anticipated Workload: Two initial meetings to develop the surveys, followed by occasional communication via email.

STEM/STEAM Seal Subcommittee

- a. Rationale: SB 241 in 2017 established the requirements for high school graduates to be awarded a STEM or STEAM seal on his or her diploma. Students, teachers, high school counselors, and university administrators need to be made aware of the opportunity.
- b. Charge: Develop an awareness plan, with accompanying materials, targeted at the stakeholders above. Collaborate with IACS Subcommittee or work in conjunction.
- c. Anticipated Workload: Three or four meetings in 2018 along with occasional emails to review and refine work product.

Student, Teacher, and School Recognition Subcommittee

- a. Rationale: The STEM Advisory Council is charged in NRS 223 with recognizing students and schools that have demonstrated exemplary achievement in STEM.
- b. History: The Council had a previous subcommittee that planned the recognition events in 2017. Events are planned for 2018.
- c. Charge: The subcommittee would review the rubric for recognizing STEM schools for possible changes and improvements, comparing to other efforts in other states and evaluate whether changes are needed to the recognition program. It would also evaluate the student and teacher recognition programs and make recommendations for improvements and statutory changes, if needed. Assist OSIT in event planning.
- d. Anticipated Workload: Three meetings in the second half of the year.

STEM Teacher Development and Resources Subcommittee

- a. Rationale: STEM Strategic Plan Priority 2: Increase the quality and scope of STEM in Nevada
- b. Charge: Develop a certificate or endorsement for STEM teachers, develop STEM teacher, administrator, and school board professional learning materials, develop a STEM teacher externship program, identify model teachers for interviews/mentorship, identify and vet other STEM resources for teachers.
- c. Anticipated Workload: Three meetings and email.

STEMworks/Scaling Best Practices Subcommittee

- a. Rationale: STEM Strategic Plan Priority 1: Goal 1, Priority 2: Goal 1, Goal 3
- b. Charge: Continue the STEMworks program and grow the list of schools on the Nevada STEM Advisory Council's list of recommended programs, refine the Nevada rubric, recruit local programs to apply, provide assistance to programs to be able to make the list.

- c. Anticipated Workload: Three meetings to develop the rubric, time to evaluate the applications.

Co-Chair Newburn commented on the general shift of the advisory council towards utilizing subcommittees, which we have already seen occur with our current four subcommittees. He added that in the original legislation appointing this council it was agreed to get as many people as possible involved. Mr. Mitchell noted the current subcommittees will continue as well and in addition to the new proposed subcommittees. He also clarified that this council can appoint whoever they want to these subcommittees without the same legislative appointment process involved with councilmember appointments. He added the STEM Advisory Council can still meet at any time at the call of the Chair. He pointed out that by statute, the STEM Advisory Council shall meet six times a year, with two of those meetings being “in-person.” He said, in his opinion, all permanent subcommittee meetings should count towards the number of meetings required yearly for the STEM Advisory Council. The council unanimously agreed to the new meeting schedule plan of fewer meetings during the year for the STEM Advisory Council. Co-Chair Newburn said this will reduce the council’s meeting to approximately 2 or 3 meetings a year and suggested that 2 of those meetings still remain as “In-person” meetings.

Kelly Barber made a motion to adopt the new STEM Advisory Council’s Permanent Subcommittees to include: Survey Subcommittee, STEM/STEAM Seal Subcommittee; Student, Teacher, and School Recognition Subcommittee; STEM Teacher Development & Resources Subcommittee; STEMworks/Scaling Best Practices Subcommittee. Judy Kraus seconded the motion. The motion passed unanimously.

STEM Advisory Council members interested to serve on new permanent subcommittees:
Survey Subcommittee

- Camille Stegman

STEM/STEAM Seal Subcommittee

- Richard Knoeppel
- Aimee Allen
- Dave Brancamp
- Kindra Fox

Student, Teacher, and School Recognition Subcommittee

- Kelly Barber
- Shelace Shoemaker

STEM Teacher Development and Resources Subcommittee

- Camille Stegman

STEMworks/Scaling Best Practices Subcommittee

- None interested members at this time

IX. Discussion on STEM Advisory Council’s Legislation Session Priorities (For possible action)

Brian L. Mitchell, Director, Governor’s Office of Science, Innovation, and Technology

Mr. Mitchell commented on the upcoming legislative session in February 2019, and pointed out that interim committees are just now gearing up. He said the Interim Education Committee has had their first meeting and will be meeting monthly for the next 6 months. He suggested the STEM Advisory Council consider its legislative priorities and possible bills representing STEM education and present them to interested legislators or to the Interim Education Committee. He presented the idea of a STEM license plate to the council with proceeds going towards scholarships or possibly teacher classroom material or even to fund the STEM Teachers of the Year. Co-Chair Newburn asked whether there is anything on the original bill for the STEM Advisory Council that needs to be addressed. Mr. Mitchell said he has discussed, with Senator Joyce Woodhouse, cleaning up the original bill that created the council, to allow for STEM recognition events to occur at locations beyond institutions of higher education to allow for more flexibility.

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

Co-Chair Mark Newburn
Co-Chair Kelly Barber

Co-Chair Newburn suggested the following items for the next agenda:

- Legislative priorities
- STEM/STEAM Seal
- Update on new Subcommittees

XI. Determine Next Meeting Date (For possible action)

Co-Chair Mark Newburn
Co-Chair Kelly Barber

Co-Chair Newburn said the next meeting is to be determined.

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 Mark Newburn

Co-Chair Newburn adjourned the meeting at 4:55 P.M.