STATE OF NEVADA

**GOVERNOR'S OFFICE OF
SCIENCE, INNOVATION &
TECHNOLOGY**
100 North Stewart Street, Suite 220
Carson City, Nevada 89701
775-687-0987 Fax: 775-687-0990

Brian Sandoval
Governor

Brian L. Mitchell
Director

PUBLIC MEETING MINUTES

Name of Organization: Computer Science Subcommittee

Date and Time of Meeting: Friday, April 27, 2018 @ 2:00 P.M. – 4:00 P.M.

Place of Meeting: Nevada State Library and Archives
                             Governor's Office of Science Innovation and Technology
                             100 North Stewart Street, Suite 220
                             Carson City, NV 89701

Please use the following numbers to join the conference Call:
North: 775-687-0999 or
South: 702-486-5260
Access Code: 70987 push #

I. Call to Order / Roll Call
Chair Mark Newburn

Members Present
Mark Newburn
Cindi Chang
Dave Brancamp
Frank Matthews
Kimberly De Lemos
Kindra Fox
Melissa Scott
Jonathan Reynolds
Jaci McCune

Members Absent
Dr. Andreas Stefik
Heather Crawford-Ferre
Dr. Pavel Solin
Kris Carroll
Rob Sidford
Irene Waltz

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.)
Chair Mark Newburn

There was no public comment.

III. **Welcoming Remarks and Announcements**
Chair Mark Newburn

Chair Newburn welcomed everyone. He announced that the State Board of Education approved the new graduation requirements for the standard diploma, hopefully pushing more kids into additional math, science and computer science. He said it consists of two new flex-credits, for a fourth math class, third science class, third social studies class or Career Technical Education (CTE) course II or III. He pointed out that SB 200 allows computer science to count as a fourth math or third science. He said with the new standard diploma he expects an even greater demand for computer science.

Ms. Chang commented that in accordance to SB 200, the Computer Science Standards are currently going through the regulatory process and will go before the State Board of Education in June 2018. She said the one-half credit graduation course recommendation will go before the Superintendents Workshop on May 8, 2018, prior to going before the State Board of Education meeting in June.

The newest members of the subcommittee were introduced;
Jonathan Reynolds- Principal at Winnemucca Grammar School
Jaci McCune- Northwest Regional Professional Development Program (RPDP), Computer Science Standards Writing Team Member

IV. **Approval of the Minutes from the March 27, 2018 Meeting** (For possible action)
Chair Mark Newburn

Chair Newburn asked if there were any corrections to the March 27, 2018 Minutes as written. None were made. Brian Mitchell made a motion to approve the Minutes of March 27, 2018, as written. Dave Brancamp seconded the motion. The motion passed unanimously.

V. **Update on Nevada Computer Science Summit** (For possible action)
Chair Mark Newburn, Cindi Chang

Ms. Chang said a press release had gone out through the Department of Education recognizing Expanding Computing Education Pathways (ECEP) and all of the support they have provided for the Nevada Computer Science Summit. She said the summit planning team has met several times and have pulled together the agenda and the events taking place at University of Nevada,

Las Vegas (UNLV) on June 18, 2018 at the summit. She reviewed the agenda with the subcommittee and asked for feedback regarding speakers, facilitators and exhibitors. She said four or five exhibitors will set up at 7:30 a.m., with a total commitment of approximately $1,700. She discussed the check-in time at 8:00 a.m., which includes a breakfast. She said the "Welcome" will be presented by Mark Newburn at 8:30 a.m. with keynote speakers, Nevada Department of Education Superintendent, Steve Canavero, who will give a landscape report of computer science in Nevada. She said also speaking is Pat Yongpradit, the Chief Academic Officer with Code.org speaking on the national perspective with computer science and where Nevada fits in. She added the hope is that Governor Sandoval will also speak in person, or possibly via video depending on his schedule. She said at 9:30 a.m. there will be a breakout session to include SB 200 in a teacher track format, with a 15 minute break following. She said the second breakout session will include a section on core teachers teaching computer science, "Innovative Teaching Practices." She said the facilitator for this session will be from the company Vidcode. She said this second session will also offer topics on diversity and equity, and how to get more underrepresented students to take computer science. She said the next session will include giving teachers "unplugged" ideas, and what is used to teach computer science, She added the final session is computer science options outside of the classroom, i.e. clubs, robotics, CyberPatriots, etc. She said after the second breakout session, lunch will follow with university panel representatives discussing postsecondary options and opportunities. She added that "Team-Time" will follow giving school districts strategic planning time. She said a closing panel will end the day with Pat Yongpradit from Code.org, as moderator of a panel discussion from industry personnel on the importance of this training, and the future of our state. Mr. Mitchell said he and Melissa Scott have invited several different forward-thinking companies from around the Las Vegas valley to participate. He added that no one has committed as of yet. Ms. Chang commented there are 84 individuals registered for the summit to date. She added if every school district brings a team the target registration would be approximately 200. She said there has been no decision of giving out or wearing T-shirts to identify staff. She added that water bottles will be given out along with posters, which are being made by a local high school that emphasize that computer science is for all students.

VI. Discussion on Guidance Document and FAQ Document (For possible action)
Chair Mark Newburn

Chair Newburn pointed out the guidance document will provide help and guidance to school districts and teachers to better understand what SB 200 requires. He said the area he would like to focus on today is that SB 200 allows computer science to count as a fourth math or a third science credit. He said some guidance on when it makes sense to do one or the other, specifically to counselors to guide students to the right path. Ms. Chang discussed the scenario of a student taking a high school algebra class in seventh grade and their accumulation of math and science credits towards graduation. Chair Newburn discussed recent recommendations on this subject from the National Council of Math Teachers. He suggested for the guidance document they include;

Recommendation:
Students who anticipate entering STEM careers and are going to college, should target the STEM seal requirements including 4 math credits, 4 science credits and additionally computer science credits.

Mr. Mitchell agreed students in seventh grade taking algebra should be identified and be put on this path towards the STEM seal. He added another subcommittee of the STEM Advisory Council, the STEM/STEAM Seal (SB 241) subcommittee is currently working on flyers and other marketing materials to make students, parents, and counselors aware of this opportunity to receive these seals. He said the higher education community needs to be aware as well in recruiting these students who are on this path. Ms. Fox commented that Washoe County School District will not allow any high school credits earned in middle school to count towards graduation.

Recommendation:
Students going to college should complete math through Algebra II before applying a computer science credit for a fourth math credit.

The National Council of Math Teachers (NCMT) recommends that all students take three years of math up through Algebra II. The NCMT's worry was that students would take computer science instead of the third year of math. Chair Newburn added that NCMT recommendations are consistent with Nevada System of Higher Education (NSHE). Ms. Scott suggested not differentiating students that go to college and students who do not, and require the same credits. The subcommittee agreed that the recommendation is that students who want to apply computer science as a math class, should at least take math through Algebra II. Chair Newburn suggested that students who get ahead of the curve by taking Algebra and Geometry should take a minimum of three pure-math classes in high school. There was discussion on when a student should use computer science as a science class and not a math class. Chair Newburn said students taking math early should still take four years of math and take computer science as a science class instead. Ms. Fox suggested from a science standpoint, students should satisfying the science requirements of life science and physical science, before they apply it as science.

Recommendation:
Students interested in applying computer science as a third science class should have taken at least one life science and one physical science class.

There was further discussion on early achievers. Ms. Scott suggested putting a reminder in the guidance document to counselors about the requirements of the STEM and STEAM seal. Chair Newburn it needs to be clear that a student entering a four-year college on a STEM program, should be pursuing a STEM seal in high school. Ms. Chang said she would add the above recommendations to the draft guidance document.

Ms. Chang said a recent issue in the FAQ document, found in SB 200, Section 8b, is "What is the criteria that will be used to evaluate a computer science course for approval?" She said the answer reads, "The computer Science subcommittee of the Governor's STEM Advisory Council will make recommendations to the State Board regarding the evaluation of the courses to be approved…" and asked what this process looks like. She added she has been receiving multiple questions on course versus curriculum. She said this part of SB 200 does not become effective until 2020, but this subcommittee will need to have a conversation on this topic at some point. She added a process will need to be implemented. There was discussion on preparing a list of approved CTE courses to be presented to the State Board of Education, specifically for this. Chair Newburn said these courses would be courses that count as a fourth

math and third science credit. Ms. De Lemos said she had been receiving questions from counselors as well, i.e "Can an Advanced Placement (AP) Computer Science course be used for math? Can it count for the Advanced Diploma or Millennium Scholarship? She added the counselors are asking for specificity of the particular courses. Chair Newburn said the original intent of the wording was with the anticipation that AP as computer science principles and A. He said that has always been the intent, and has included a lot of professional development. He added it is a problem solving class. There was a group discussion on the current 5 CTE courses and whether additional courses should be solicited by the subcommittee from school districts, prior to submitting the final course recommendations to the State Board of Education. Chair Newburn suggested that the subcommittee may want to look at NSHE course offerings in regard to dual courses.

VII. **Discussion on Changes to the 1/2 Credit Graduation Requirement** (For possible action)
Chair Mark Newburn

Ms. Chang referred the subcommittee to the handout "Suggested standards to use for one-half credit graduation course," which she put together from computer science standards and technology standards as they are currently, and reminded the group that those standards will be going through revisions in the fall. She asked how many overall standards should be included in this one-half credit course without it being too much, as well as not having gaps of knowledge. She pointed out a one-half credit course is 18 weeks, she suggested 9 weeks of digital citizenship, productivity tools refresh and/or deeper dive, and 9 weeks of computer science and computational thinking. Chair Newburn commented that the ratio of standards for middle school to high school appears to be right, as well as descriptions of courses. Ms. Chang commented that Computer Science Discoveries covers many of these standards and more, and pointed out there may be overlap with Digital Citizenship when it comes to privacy, security, and risks to theft/hacking topics.

Ms. DeLemos shared comments from a Clark County School District counselor, from the middle school level, stating they have a course in computer literacy, which is basically Computer Applications along with a course related to and covers the computational thinking piece, more related to Computer Science Discoveries. She said this counselor goes on to say that with the confusion of the new requirements, they plan to merge the two classes so it will have the makeup of the requirements for one computer science middle school course. She said the issue is the Computer Literacy course, which currently satisfies the one-half credit requirement for graduation is a pass/no-mark course, meaning students do not receive letter-grades. i.e. A, B, C, D, F, on their transcripts. There has been much conversation on how these grades translate from middle school to high school, as well as how GPA's are calculated at the high school level. She asked the subcommittee if there is a requirement that the course be a "letter-grade" course, or does it even matter. Ms. Scott suggested that is a decision for each individual school district to make and is not specified in regulation. Ms. DeLemos said her primary concern is any specificities within the language of the regulations. Ms. Fox mentioned she has heard many concerns within Washoe County School District about the timeline and the requirement of the one-half credit course and asked whether that timeline could be changed to next school year, as their course booklets are already out and students are already registered. She said the school district would require another year to make the change happen in the Washoe County School District. Ms. Chang responded that in accordance with SB 200, on July 1, 2018 the one-half credit course needs to include the prescribed percentage of Computer

Science and Computational Thinking. It was discussed that this is a problem if the one-half credit course is expected to roll-out in the 2018-19 school year. Course booklets have been out since November 2017, and students are already registered with courses that they believe count towards district requirements. It was suggested to implement this requirement in the 2019-20 school year. Ms. Chang suggested if these subset of standards are chosen, a computer science CTE course could count as the one-half credit, touching on the computer science standards, leaving the technology productivity requirement open. She further suggested an addendum be put out to those teachers with courses that do count, infusing the technology standards subset decided on, with the instruction over the course of a few weeks to make the course count.

There was concern that the course of Computer Principles, by itself does not count towards the one-half credit. Prior to this change, Computer Principles counted towards Computer Literacy. Ms. Fox said Washoe County School District needs time to work through this one-half credit course, and pointed out that it could be implemented in the 2019-20 school year. Ms. DeLemos said Clark County School District would also not be prepared to implement the one-half credit until the 2019-20 school year. Chair Newburn said it appears the school districts require an extra year to make this transition, which seems reasonable. Referring to the standards within the Guidance Document, Chair Newburn said this subcommittee could make it effective for the school year of 2019-20. It was asked whether an extension of the timeframe mandated by SB 200 is possible.

Ms. Chang said another change that will have to take place includes computer and technology education prior to the sixth grade, and asked if that is another area that would require an extension of time. Chair Newburn asked what the drawback would be in giving school districts the ability of using current standards and not have the new standards go into effect until the 2019-20 schools year. He added the new standards will define what is required in the course. Mr. Brancamp said the Department of Education has always allowed standards in any adoption-run be the very first year after they are adopted by the State Board of Education, giving all school districts that year to change and adjust curriculum. He added from the departments perspective, a school district would have all of the 2018-19 school year to adjust their curriculum and the Department of Education would not ask for implementation into instruction until the 2019-20 school year.

Chair Newburn clarified that the deadline of July 1, 2018 is for this subcommittee to get the Computer Science Standards approved and the Regulations in place along with the Guidance Document, giving school districts all of next year to make these adjustments before the 2019-20 school year. Mr. Brancamp agreed. Ms. Scott asked whether the school districts need to formally request this extension of time. Mr. Brancamp said the Department of Education would not ask anything of the districts until the 2019-20 school year. He said any problems would be brought back to this subcommittee. He said all school districts have the 2018-19 school year to make the adjustments necessary to implement the new standards in instruction in the 2019-20 school year. Chair Newburn asked whether this information should be placed in the Guidance Document. Mr. Brancamp replied it could be placed at the beginning of the document for clarity to stakeholders. He also suggested that the Guidance Document, a draft of the Computer Science Standards be shared for additional review by experts in the field from both Washoe County and Clark County School Districts for any further suggestions.

VIII. Discussion on Licensing Regulations (For possible action)
Chair Mark Newburn, Melissa Scott

Ms. Chang said the licensing regulations were approved with the changes discussed by this subcommittee at a prior Computer Science subcommittee meetings to include two endorsements; Computer Science and Applications Endorsement requiring nine credits and the Advanced Computer Science Endorsement requiring twelve credits, or passing the PRAXIS exam. She added that one issue brought up was regarding the licensing endorsement and where those courses come from. She said RPDP is working with UNLV, as well as Touro University Nevada is working on getting courses together in a series that would cover all of those required credits, i.e. Methods, Concepts, etc. She said this would give teachers the option of taking the whole series or just take the credits they need for the endorsement they need.

Mr. Mathews further discussed courses at RPDP and the process of approval and turn-around with UNLV, which will not be until fall of 2018. He said RPDP did run the JAVA class and will be writing another computer language class. Ms. Chang asked with the Concepts course requirement for the endorsement, which RPDP is offering Discoveries and Principles to cover it, whether it is set up so teachers can get their credits through UNLV. Mr. Mathews said after checking with UNLV, the Concepts class is already in place, and a Methods for Teaching Computer Science class is in place. Ms. McCune said RPDP is working on getting classes in Northern Nevada in the fall of 2018 as well, making it more manageable for teachers in the north by providing more options. Ms. Scott asked about Eastern Nevada and online courses. Mr. Mathews said in the Elko area, they are onboard 100% with the Principles class. He added that an online Java class was offered as an introduction, and will be offered again in the entire state. He said there are other online options available to teachers in Eastern Nevada through UNLV, Touro University Nevada, etc.

Ms. Chang said the Commission on Professional Standards (COPS) commented they are excited about the change in computer science and they are very happy with the licensing regulations, and added that everything went very smoothly with the COPS portion of the process. She said the regulations will still need to go through the complete regulatory process, but they are moving forward.

IX. Consider Future Agenda Items for the Next Meeting (For possible action)
Chair Mark Newburn

The following items were suggested as agenda items for the next meeting:
1) Update on Nevada Computer Science Summit
2) Discussion on the Guidance Document and FAQ Document
3) Feedback on the One-half Credit Graduation Requirements
4) Discussion on SB 200, Computer Ed Tech before 6th grade.
5) Discussion on Recruiting and Training of Teachers

Mr. Mitchell pointed out that the Federal Department of Education has a grant program to support the training of highly effective educators, which is a grant between $1 million and $6 million. He asked whether the subcommittee was interested in pursuing that grant, with a deadline of May 17, 2018. It is the Supporting Effective Educator Development Grant Program

(SEED). He added that eligible applicants would include an institution of higher education or a national non-profit. He said he informally reached out to UNR and said the Raggio Center may be interested. Chair Newburn asked that this information be forwarded to Dr. Andreas Stefik. It was suggested the subcommittee have further discussions on Future NSF and DOE Grant Opportunities.

Ms. Chang said ECEP has offered for each of the seventeen affiliates in the state alliance to send one teacher to the Computer Science Teachers Association (CSTA) National Conference in July 2018. She said ECEP will cover all travel costs, and have given until May 19, 2018 to nominate a teacher. She asked whether an application would need to be put together and asked for suggestions. Chair Newburn suggested the ECEP Leadership team make the selection, and said the full subcommittee was not necessary. The group agreed. It was agreed that the ECEP Leadership team, Cindi Chang, Dave Brancamp, Melissa Scott and Mark Newburn, would have further discussion on this topic after the meeting today.

X. **Determine Next Meeting Date** (For possible action)
Chair Mark Newburn

A Doodle Poll will be sent out to determine the next meeting date, preferably by the end of May 2018.

XI. **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.)
Chair Mark Newburn

There was no public comment.

XII. **Adjournment**
Chair Mark Newburn

Chair Newburn adjourned the meeting at 3:48 p.m.