STATE OF NEVADA

GOVERNOR'S OFFICE OF SCIENCE, INNOVATION & TECHNOLOGY
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Steve Sisolak
Governor

Brian L. Mitchell
Director

PUBLIC MEETING MINUTES

Name of Organization: Computer Science Subcommittee

Date and Time of Meeting: Thursday, December 19, 2019 at 3:30 PM

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 #

1. Call to Order / Roll Call
Chair Mark Newburn

The Computer Science Subcommittee was called to order by Chair Mark Newburn at 3:30 P.M. on Thursday, December 19, 2019, on the above conference line.

Members Present
Andreas Stefik
Cindi Chang
Dave Brancamp
Jaci McCune
Jonathan Reynolds
Kimberly DeLemos
Kindra Fox
Mark Newburn
Melissa Scott
Pavel Solin
Robert Quinn

Members Absent
Glenn Krieger
Heather Crawford-Ferre

Irene Waltz
Rob Sidford

Staff Present
Brian Mitchell
Debra Petrelli

A quorum was declared.

2. **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.

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

Chair Newburn welcomed everyone to the meeting. There were no announcements.

4. **Approval of the Minutes from the July 31, 2019 Meeting** (For possible action)
Chair Mark Newburn

Chair Newburn asked if there are any changes or corrections to the July 31, 2019 Minutes as written. Ms. DeLemos commented that on page 5, second paragraph, 8th line down, it should read "...*grade*-banded.." and on page 7, second paragraph, 3rd line down the sentence, "*She said he believes it is much more than just CTE, Computer Science or STEM*" should be omitted, as it has no connection to the intent of her comment. No other corrections were discussed. Chair Newburn asked for a motion. Ms. Scott made a motion to approve the July 31, 2019 Minutes to include the correction above mentioned. Mr. Brancamp seconded the motion. The motion passed unanimously.

5. **Update on Computer Science Progress and Senate Bill 313** (For possible action)
Chair Mark Newburn and Cindi Chang

Ms. Chang commented that the week of December 9th was designated Computer Science Week and was celebrated internationally. She said numerous activities took place throughout school districts around the state and Governor Sisolak issued a Proclamation recognizing the week of December 9 -15, 2019 as Computer Science Education Week in Nevada. She commented on the Nevada Department of Education (NDE) and members taking part in kindergarten and elementary grade level activities.

Ms. Chang informed the subcommittee the Report on the Biennium for Computer Science Education containing statistics, achievements, etc., has been posted on the newly revised NDE website for Standards and Instructional Support. She highlighted that Nevada has been recognized by the College Board with the following: Female participation has grown 175% for the AP Computer Science Principals exam, which is

the newest exam for the College Board AP. She said it went from 99 females taking that exam in 2017 to 272 just a year later; in the Hispanic/Latino demographic, participation group grew by 179% also within that 2-year span, from 89 students to 248 students; and the African-American population grew by 217%, which went from 12 students taking that exam to 38 students.

Ms. Chang, referring to SB 200, said all high schools must offer Computer Science by 2022, and reported a steady increase since 2015 when only 19 high schools in the state offered Computer Science. She reported the 2018-19 school year had grown to 60 schools offering Computer Science and expects steady progress to continue. She said the funding from SB 313 has been dispersed between Clark County and Washoe County School Districts as specific allocations, and the final allocation was divided evenly between the rural school districts and charter schools that applied. She said with so much interest this year, no district was able to receive the same amount of funding as in the past, however, much of the prior funding had been used for teachers getting reimbursed for endorsement courses completed. She said also in SB 313, a special account was created to help alleviate some of those costs for school districts. She said a good portion of the SB 313 funding is going towards supporting teachers to attend the upcoming Computer Science Summit in Reno in February, and the Computer Science Summit in Las Vegas in March 2020. She added that funding for professional development is included along with support of some equipment. She commented that in Southern Nevada every weekend from now until the end of the school year has been booked out at the Regional Professional Development Program (RPDP) with Computer Science Fundamentals training for elementary teachers. She said the two upcoming Computer Science Summits will be an opportunity to concentrate on getting training out at one time to a larger group of teachers. She said there has been a lot of teacher interest in receiving coursework towards the endorsements for computer science. Ms. McCune commented that approximately 30 teachers had gone through the Northwest Regional Professional Development (NWRPDP) program last year and expects at least that many in the next cohort. Ms. Chang added that approximately 30 teachers were in the program at Touro University, and said the momentum is steadily building with increased interest from teachers to become endorsed in computer science.

Chair Newburn commented on the Expanding Computing Education Pathways' (ECEP) Code.org summit, CSEdCon, that took place in September 2019, in Las Vegas at the Mirage Hotel. He said it was the first international K-12 education summit and was the first to cover K-12 computer science. He added that Governor Sisolak gave the opening address in which he announced that Tesla will invest $1 million to support Nevada's K-12 computer science education as part of the company's statewide education investment. Nevada participated with a special panel on K-12 computer science which consisted of Senator Joyce Woodhouse, Superintendent Jhone Ebert, Brian Mitchell, Director of OSIT, and Mark Newburn, Vice President of the Nevada State Board of Education, with discussion on how Nevada has made great strides in computer science. Ms. Chang said it was a nice opportunity to have the Governor and Senator Woodhouse participate and commented that other participating states are now looking at Nevada as a leader in the field of computer science education. She said also in attendance at the summit were international representatives from other countries.

Ms. Chang, referring to SB 313, discussed the progress of the subcommittee in computer science. She said SB 313 calls for an internet repository of resources that provide instruction for computer science to assist educators in resources to help in the instruction of Computational Thinking and Coding. She commented that Mr. Mitchell, Director of OSIT, has agreed that many of those resources can be placed on the STEMhub website, and added NDE can also add resource pages to their website once it is finished being built out. She further discussed the requirement of creating an account for Computer Education and Technology within the NDE where grant money can be accessed. She said these funds can be used to either help reimburse the cost of coursework by teachers seeking the endorsement in computer science, or funds can be drawn upon for higher education institutions attempting to buildout their teacher prep programs allowing preservice teachers to receive instruction in computer science prior to getting into the classroom with students. She further discussed the State Board will adopt regulations that will govern the distribution of money from this account for those purposes. She pointed out SB 313 also calls out that RPDP must now include Computer Science and Computer Education and Technology instruction as part of their required coursework and added RPDP is already meeting this requirement. She said for those SB 313 grants, Clark County School District was awarded $400,000 for this year and $400,000 for next year; Washoe County School District was awarded $100,000 for this year and $100,000 for next year; and rural school districts and statewide charter schools will share $200,000 for this year and $200,000 for next year in a non-competitive allocation process. She said SB 313 also awarded the RPDP's throughout the state $120,000 for professional development. She pointed out these grant allocations had been reduced this year because in the past much of the grant money awarded to school districts included professional development and now that funding will go directly to the RPDP. She said the bill also provides funding for NDE to attend school site visits and monitor the amazing work being done in school districts around the state, as well as a special account for Computer Education Technology which can go to reimburse teachers and start the Education Preservice Teacher program for computer science with $100,000.

She briefly discussed another source of funding that came from Tesla for $1 million to further support efforts in computer science and to assist the RPDP in providing the training needed for teachers throughout the state in all school districts. She said in discussions with Tesla, they recognized that funding was being reduced, and this additional gift was given to further support teacher training in computer science, as well as additional funding towards upcoming Computer Science Summits for the next 5 years.

Ms. Chang said it is necessary to find out (1) how many teachers are coming through these programs to add endorsements to their existing licenses, (2) what the needs are in school districts for teachers to be trained in those courses, and (3) the needs of preservice teacher programs. She suggested at the upcoming Computer Science Summit a track for higher-education people be included so they can come together and discuss their needs. She said this would be helpful in determining how this grant application will unfold by establishing the need for teacher reimbursements and the teacher prep program. She asked representatives from Washoe County School District (WCSD) and Clark County School District (CCSD) whether it would be beneficial to put out a survey asking those questions to their districts. Ms. DeLemos with CCSD said if there is specific information and it is compiled into a survey, CCSD would be happy to send it out. Ms. Fox with

WCSD agreed and said WCSD would also be happy to send out a survey. Ms. DeLemos suggested adding to the survey whether any teacher who desires and plans to be licensed include what their time frame would be, i.e. in the "next two to three years," or "as long as funding is available." Ms. Chang agreed and added that each school district will have to determine how much they will be reimbursing. Ms. DeLemos asked what the guidelines were for those reimbursements and whether that information would come from the NDE, the school districts or from this subcommittee. Ms. Chang read from the SB 313;

SB 313 Sec. 2
A person who receives an endorsement to teach in a field of specialization relating to computer literacy and computer science may request a reimbursement for the cost of the coursework required to receive such an endorsement from the board of trustees of a school district or governing body of a charter school that employs or will employ the person. The board of trustees or governing body, as applicable, may reimburse the person using money received from a grant provided to the board of trustees or governing body pursuant to NRS 391A.510 or section 3 of this act.

Ms. Chang asked for Chair Newburn's interpretation of the bill as to who will be making those determinations of setting the guidelines on amounts to be reimbursed. Chair Newburn suggested the regulations will outline those distribution amounts for those reimbursements. He said it will be important to layout what is needed and/or some flexibility in those regulations. Ms. DeLemos asked how time-sensitive getting that information to teachers would be as to when funding ends and/or does not end, and in addition, whether a teacher must complete the requirements for an endorsement, or can they be reimbursed for working towards an endorsement. Ms. Chang replied the wording in the bill specifically says, "*A person who receives an endorsement to teach in a field of specialization relating to computer literacy and computer science may request a reimbursement for the cost of the coursework required to receive such an endorsement.*" She said she interprets that as a teacher must receive their endorsement before they can get reimbursement. She said, as Chair Newburn pointed out, the minutia will be brought out through the writing of the regulations. Chair Newburn commented the draft regulations should be run through this subcommittee first to afford the opportunity of a first-look and get feedback before they go forward. Ms. DeLemos inquired as to how time sensitive the endorsements would be for funding and how teachers pursuing their endorsement will be addressed. Chair Newburn said the regulations will also address that issue. Ms. Chang commented the regulatory process will begin at the first of the year, 2020.

Ms. Chang read comments received from other school districts addressing licensing regulations for elementary teachers who already teach all subjects and their concerns with endorsements and licensing. The subcommittee further discussed elementary, middle and high school level endorsements and licensing. Chair Newburn suggested a secondary meeting for those interested in further discussing licensing outside of this meeting. Ms. Chang said she would send out an invite to all that are interested in further discussing these licensing issues and their impact.

6. **Computer Science Curriculum Review Committee** (For possible action)
Chair Mark Newburn and Cindi Chang

Ms. Chang said SB 200 requires this subcommittee to review all computer science curriculum and instructional material and in a previous meeting a smaller reviewing committee was put together to take on that work. She said several school districts have also recommended individuals to be on that committee to add content area experts to the process. She reported a Request for Information (RFI) had gone out on December 9, 2019 and will close January 13, 2020, for the process of receiving materials and collecting curriculum information from vendors and others specifically related to computer science. She said NDE is also working closely with the Career and Technical Education (CTE) office and will only accept computer science pure CTE Pathways coursework for review, and not look at other pathways including web-design, game-development, cyber-security, etc. She said once all the material is received and reviewed for completeness, the complete package will be sent over to the reviewing committee. She said from there the reviewers will put together a recommendation list which NDE will take before the State Board of Education for approval. She added there will hopefully be some approved curriculum and instructional materials before the April 2020, State Board of Education meeting.

Ms. DeLemos asked whether those proposed changes filter into the way instructional material is adopted. Ms. Chang replied the same process is being followed as with all core instructional material reviews within the State. She added the rubrics are very similar with only the content area being different, but the same process is being followed as with other core areas. She added that because SB 200 calls out this subcommittee to oversee computer science, a separate but equal review process is being done, and added it includes the integrated technology component as well. Ms. DeLemos asked whether this will be an official adopted list and whether the requirement of courses approved by the Board of Education will be available, along with a materials list, in a certain location. Ms. Chang replied the list will be posted on the NDE's website under "Instructional Materials" once it goes through the State Board of Education. She added it is the goal to get everything done and get on the State Board of Education's agenda for the April 30, 2020 meeting, and if not, the June 4, 2020 meeting will be the next one. Dr. Stefik asked whether vendors have enough materials to match Nevada standards. Ms. Chang named several organizations she has heard from of which many had attended her recent technical webinar on the standards. She pointed out the K-12 framework and the Computer Science Teachers Association (CSTA) Standards were used to build the Nevada Computer Standards and added the International Society for Technology in Education (ISTE) Standards were used to build the Nevada Integrated Technology Standards. She said she is aware that in the past if there were areas in the curriculum or standards not touched on, an addendum was provided which could make up those areas of deficiency. She said the rubric from which they will be evaluated along with a worksheet for self-evaluation will be posted.

Ms. Chang commented she would still like to explore further with Dr. Stefik on the topic of "Students with Disabilities." Dr. Stefik said he and a colleague had investigated different alternative procedures and would forward that information on to Ms. Chang.

Ms. Chang thanked him and commented it may be necessary to push some vendors to be more inclusive of this topic.

7.   **Computer Science Summit 2020 Planning Committee** (For possible action)
Chair Mark Newburn and Cindi Chang

Ms. Chang said the task force working on the Computer Science Summit is primarily the RPDP who is leading the way with professional development. She said in Reno, the Computer Science Summit will take place on February 8 -9, 2020, with a second Computer Science Summit taking place in Las Vegas on March 28- 29, 2020. She said it had been decided to have two separate locations for the summit with similar tracks and topics since more funding is now available from Tesla and SB 313 to support direct instruction for teachers without necessary travel to one location. She said currently there are 115 registrations in place for the Reno Summit and 212 registrations for the Las Vegas Summit. She said the tag line this year is Nevada Computer Science Summit 2020 – Achieving 2020 Vision for CS Education.

Ms. McCune reported there are two dynamic keynote speakers who are both innovative and will discuss empowerment and student creativity as well as opportunities for students in computer science. She said teachers will present what has been done in schools, with a full gamut of K-12 sessions. She added that several companies/businesses will also be attending. Ms. Chang said there will also be a focus on school counselors to include training from the National Center for Women in Information Technology (NCWIT). She said an invitation will be going out to higher education and ECEP has agreed to send two national computer science experts to help guide the preservice teacher program and what it might look like, as well as its potential and possibilities. She added they will also help to determine how much funding is required to develop those programs.

Chair Newburn requested that the registration be resent to all Computer Science Subcommittee members to make sure everyone is aware and invited. Ms. Chang agreed.

8.   **Computer Science Equity and Diversity Advisory Team and Admin Training Guide**
(For possible action)
Chair Mark Newburn and Cindi Chang

Ms. Chang said after reaching out to different people in different areas of computer science there was a lot of interest in becoming a part of this project to build a Computer Science Equity and Diversity Guide for Nevada. She said she envisions the Computer Science subcommittee being the lead for this project and said there is a special line item from Tesla for funding this project to gather people together and build-out what this looks like. She commented that ECEP has also offered to support Nevada's efforts with this project. She added that by 2022, all high schools must not only offer computer science, but must be making efforts towards increasing the State's enrollments for females, students with disabilities, and underrepresented minorities in the field of Computer Science. She added that the subcommittee could be supportive by providing a guide on what that would look like and how efforts can be made to support these students taking computer science in the classroom.

Mr. Mitchell asked whether Tesla was funding this program or if ECEP was funding it. Ms. Chang replied there is a small line item on the Tesla grant to help support the program and ECEP has currently released a mini-grant opportunity with 2 rounds, the first round being due on January 10, 2020 and the second round due March 27, 2020. She said, if awarded, OSIT has agreed to be the fiscal agent for the ECEP mini-grant. She asked whether the subcommittee would like to apply for this grant for this purpose or whether there is need elsewhere. Chair Newburn said he participated in the calls from ECEP and they are looking for expanding access, and commented this funding seems to be right on target for what ECEP is looking to do. Mr. Mitchell asked, given there are 2 deadlines for this grant, which one the subcommittee would like to target. Ms. Chang said she has reviewed the January 10th deadline and feels that would work. Chair Newburn asked whether this would be a "Summit" for Nevada Equity and Access and what that timeline would be given the two Computer Science Summits are coming up, then suggested they could recruit for it at the Computer Science Summits. Ms. Chang responded they don't necessarily want too large of a group for building this project, because that tends to make the work stall. Chair Newburn said this might be more of a workshop than a summit. Ms. Chang agreed and said enough voices are needed for all areas to be addressed. Mr. Mitchell said he has taken part in meetings that were referred to as "Thinkers Meetings" with a defined agenda that typically take place in the course of a day and a half with certain topics being discussed and consist of 10-12 people with different areas of expertise.

Ms. DeLemos asked whether this is the same group Ms. Chang had asked for member recommendations from the subcommittee. Mr. Chang said this is the same group and added that she has already reached out to everyone that was recommended to her from the subcommittee and received good responses. She said several experts had shown interest from national organizations, along with others from UNLV representing special populations. She said Dr. Stefik and his colleague are also invited for their expertise on students with disabilities. Ms. DeLemos said it appears a good number of experts have been contacted from various entities and groups to make up this action team. Ms. Chang agreed and said she is waiting to hear back from one more individual, after which she will distribute that list of names to the subcommittee for review for any areas of expertise that may have been overlooked. She added it is not the goal for this action team to discuss the problems with diversity but rather to recognize the problems and how they affect computer science, then move forward on ways to approach the issues with solid expectations, resources and tools for administrators to meet the requirements of SB 200. She asked the group for feedback on a timeline, i.e. late spring, summer or perhaps next fall for that group to convene. Mr. Mitchell commented the funding for this convening may take longer than expected. He suggested submitting the application by the January 10, 2020 deadline. Chair Newburn said it may be prudent to wait until the funding has been awarded before setting a date. Ms. Chang agreed and said she will submit the application by the January 10, 2020 deadline and go from there.

9. **"Computer Education and Technology prior to 6th grade" and Integrated Technology Standards update** (For possible action)
Chair Mark Newburn and Cindi Chang

Ms. Chang said training is going very well and thanked the school districts and RPDP for providing instruction for the required ½ credit course for high school and the prior to 6th grade computer science requirement. She said the K-5 piece goes into effect this fall 2020 and said RPDP is booked out solid every Saturday through that time for K-5 teacher training. She asked whether any school districts or RPDP have concerns or specific needs that this subcommittee could provide support. Ms. DeLemos responded that two questions had come up from CCSD, (1) whether the Computer Science subcommittee could lend support, and (2) whether language could be used so not to overwhelm elementary school teachers. She also thanked RPDP for all their trainings which have been very active in Clark County. She added that with over 200 elementary schools in Clark County, the district is working diligently to scale up. She added that hopefully with continued support from funding and RPDP they will be able to continue training for those teachers but feels they may need more time. Ms. Chang asked whether invitations to the Computer Science Summit had gone out to CCSD elementary teachers for assistance with bridging the professional development. Ms. DeLemos responded they had gone out.

Ms. Chang pointed out that in one of the school districts a "test-out" option had come across the table for the ½ credit course at the high school level and asked whether this should be addressed by the subcommittee since it is a subcommittee responsibility for looking at curriculum instruction for computer science. Chair Newburn responded that this issue warrants a discussion by the subcommittee. He suggested looking into "test-out" options for other subjects and what that looks like. He added this topic will be added to the subcommittee's future agenda items for further discussion.

10. Discussion on the Upcoming 2021 Legislative Session for the STEM Advisory Council and Anticipated Legislative Actions (For possible action)
Chair Mark Newburn

Chair Newburn commented that after the last Computer Science Summit, he and Ms. Chang were invited to a Code.org meeting which is now working on "what's next." He said Code.org has put out 9 items for K-12 computer science and now this group is looking at what the next steps are and what needs to be done. He commented they could assist the Computer Science subcommittee on topics that might be beneficial to pursue in upcoming legislation. Ms. Chang added they meet every other month with frequent conversation on this topic.

Mr. Mitchell commented that discussion on the upcoming 2021 legislative session may not necessarily need discussion today but rather the subcommittee could start thinking about topics for consideration in the next legislative session and compile a list in the next few months. The list could be submitted to the STEM Advisory Council for inclusion to their recommendations. Chair Newburn suggested two topics for upcoming legislation discussion; 1) new things the subcommittee wants to do or enhance, and 2) fixing or resolving existing issues, especially from SB 200 and/or SB 313.

There was a brief discussion that Senator Joyce Woodhouse, the subcommittee's past Champion for computer science, is now termed-out at the legislature and whether she

could still submit BDR's on the subcommittee's behalf. Ms. Mitchell suggested it may be time to find a replacement for her to carry on the subcommittee's work.

11. **Reports from the Subcommittee** (For possible action)
Chair Mark Newburn

There were no subcommittee reports.

12. **Future Agenda Items** (For discussion)
Chair Mark Newburn and Cindi Chang

Chair Newburn said one future agenda item would be to look at the test-out options for the ½ credit course. Ms. Chang also suggested a discussion on ideas for the 2021 Legislative Session.

13. **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.

14. **Adjournment**
Chair Mark Newburn

Chair Newburn adjourned the meeting at 4:57 p.m.