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

MINUTES

Name of Organization: **Computer Science Subcommittee** of the Science, Technology, Engineering and Mathematics (STEM) Advisory Council

Date and Time of Meeting: **July 17, 2017 at 1:00 P.M.**

Place of Meeting: Governor's Office of Science Innovation and Technology (OSIT)
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
            Mark Newburn, Chair

Chair Newburn called the meeting to order at 1:06 P.M.

Members Present: Mark Newburn; Dave Brancamp; Dr. Kimberly Vidoni, Melissa Scott; Kimberly Moody; Dr. Andreas Stefik; Dr. Pavel Solin; Frank Matthews, Kindra Fox, Cindi Chang, Brian Mitchell

Members Excused: Kris Carroll, Rob Sidford

Staff Present: 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, Chair

Chair Newburn welcomed everyone. He said today we will talk about SB 200 which will set the framework for our future actions.

IV. Approval of the Minutes from the April 28, 2017 meetings (For possible action)
            Mark Newburn, Chair

Ms. Scott made a motion to accept the April 28, 2017 Meeting Minutes. Dr. Vidoni seconded the motion. The motion passed unanimously.

V.   Update on SB200 (Senate Bill 200: Signed into law by Governor Sandoval)
(For information only)
            Mark Newburn, Chair
            Brian Mitchell, OSIT

Chair Newburn commented that SB 200 passed legislation on the very last day of the session, with $2.4 million funding attached for professional development. He talked about a presentation that was given to Expanding Computer Education Pathways (ECEP) Alliance, and said they are very interested in what we have accomplished.   He commented that he and Cindi Chang have begun work on some of the following six items mandated by SB 200:
1) Create the Computer Science (CS) Subcommittee, which has already been done, and is now recognized in the Nevada Revised Statutes (NRS) and will be responsible for and make recommendations to the Board of Education on courses, curriculum and professional development.
2) Add Computer Science Standards to the current Technical Education Standards.
3) Move basic computer literacy from middle school to K-5.
4) Have CS count as a fourth-math or third-science credit.
5) Require all high schools to offer an approved computer science course.
6) Have the ability to go after the half-credit computer literacy graduation requirement and inject computer science into that course.

Chair Newburn commented that everything they were looking for this bill to do was basically accomplished. One thing included on SB 200, that was not expected, was it also affects charter schools, as well as traditional public schools. He added that enrollment increases are expected in courses for girls, students with disabilities, and underrepresented minorities as defined by

the State Board of Education. He commented that Dr. Stefik had requested the inclusion of students with disabilities and Senator Joyce Woodhouse agreed and from there it was never an issue in the entire process of the bill.

Chair Newburn further discussed the difference sections of SB 200. Section 3 requires students receive training in computer education and technology by the sixth grade. Section 4 states CS can count as a fourth-math credit or a third-science credit, with the STEM Advisory Council making recommendations. Section 5 adds the standards to the current Computer Technology Standards. Section 6 states computer science can count towards college admission as a third-science or fourth-math credit beyond Algebra II, if the State Board of Education approves that particular CS course. Section 7 states CS can count as a math or science credit for any requirements for the Millennium Scholarship. Section 8 refers to the Computer Science Subcommittee and its role in advising the State Board of Education and Academic Standards Council, the Charter School Authority, the Commission on Professional Standards and School Board Trustees on CS curriculum and professional development and licensing.

Chair Newburn said, lastly, the set of appropriations are broken out over two years. He added not all of these requirements will happen at the same time. There is a set of appropriations that went into effect in July, others will not go into effect for a couple of years. He said the final requirement that all high schools offer a CS course does not go into effect until 2022.

He called the bill an enormous victory, and said there is a lot of planning, followed by implementation and communication that will have to be done, which will be rolled out by this subcommittee's strategic plan.

Dr. Vidoni asked how the CS standards will fit within or be separate from the Computer Technology Standards. Chair Newburn said that will be decided on. He said he sees this as a category, like Science Standards, and we are injecting a new field of science that will go under the larger category of science. In this case we are injecting computer science, under a larger umbrella, into Computer Education and Technology Standards, leaving much to be determined by this subcommittee. There was a discussion on the funding for this initiative and where the federal government fits in. Chair Newburn commented the only funding we are currently waiting on is from the National Science Foundation (NSF), which is funding for the actually standards writing. We are not anticipating using any other federal funding at this time.

VI.   Update on NDE CS Page, CSFORNV Website, and Social Media. (For information only)
                Cindi Chang

Ms. Chang said a folder had been set up in Google Drive so all members could have access to the same information. She commented there are seven folders included, one with subcommittee contact information. There was a discussion of the actual title of this group. Mr. Mitchell confirmed the subcommittee's title is Computer Science Subcommittee of the STEM Advisory Council. Ms. Chang pointed out another folder is entitled "Business Industry Partners," which includes people that have approached her asking to be a part of this initiative and assist this subcommittee. The next folder is the "CS Writing Team" folder, which includes the K-12 CS framework which we will be building the standards from. Also included are the current Nevada Technology Standards, as well as sample standards from the Computer Science Association and some sample standards from other states. She said there is a folder with official CSforNV logo's for the subcommittee's review. Another folder contains meeting information for the Licensing sub-subcommittee. There is another entitled "Other State Samples" which contains information on Arkansas and a fact sheet they have put together. This will be a good place to put interesting things from other states as we come across them. Another folder is all about SB 200 and the last folder is CS Strategic Planning.

Ms. Chang commented on the Department of Education's website, with information on changes taking place in computer science within the state, as well as organization links and other resources.

Ms. Chang said the official Twitter social media account for Computer Science for Nevada is: @CSFORNV.

Ms. Chang talked about building more of the CS Community within the state, which would include resources for families, teachers and administrators. She added the Department of Education's website is not the appropriate venue for that information, so together with Brian Mitchell of OSIT and the programmers of the STEMhub website, we are working on finding a place on the STEMhub website for the computer science community to get information and resources, as well as communicating with each other.

Chair Newburn said we will need a mechanism to start communicating what is required from SB 200 out to schools and school districts. Ms. Chang commented on the Board of Education's website and an area entitled, "This is my Role in Nevada" that will direct administrators, teachers, and district leaders to each of their new responsibilities resulting from SB 200.

VII.   Discussion on CS Teacher Licensing and Endorsements (For information only)
             Cindi Chang, Melissa Scott

Ms. Chang commented that the licensing subcommittee reviewed the current computer science licensing endorsements. Ms. Scott stated there are currently three endorsements; 1) Computer Literacy, which has six credits; 2)

Computer Applications, which requires twelve credits; and 3) a Computer Science/Computer Programing endorsement that also requires twelve credits. All three can be added to any base-license which allows a teacher to teach that subject at that level. The idea is that you can take two classes and get one endorsement and teach at that level. Ms. Scott pointed out the CS Teacher Licensing and Endorsement Sub-subcommittee will take recommendations directly to the Commission on Professional Standards (COPS). She said the next meeting of COPS is on August 16, 2017.

There was comment on the content of the CS Teacher Licensing and Endorsements classes. In regulation, it is usually up to the post-secondary institution to determine the content. Ms. Chang has drafted a concept paper, "Proposed Teacher Prep Course Sequence," which discusses a possible course sequence to get teachers trained and endorsed to effectively teach computer science at the middle and high school levels.

A discussion on computer language ensued. It was clarified that the suggested course was specifically written in Java (a programing language) because of the current Advanced Placement (AP) program. It was clarified that the regulations the subcommittee are proposing say a "computer language" and not specifically "Java." It was also discussed, in looking at a K-12 spectrum, the intention of the advanced computer science endorsement is for the Career Technical Education (CTE) courses which are programming courses in coding.

A discussion followed on what the average cost would be for CS teacher licensing and endorsements. Ms. Scott commented it is required by regulation these credits be university credits, so even though training will be provided by the Regional Professional Development Program (RPDP), teachers will have to enroll in college courses. She added RPDP has partnered with UNLV for discounted costs for these courses. It was mentioned that the cost is $35 per credit at UNLV.

VIII.   Update on K-12 Computer Science Standards (For information only)
                Dave Brancamp

Mr. Brancamp commented we are missing one signature on the grant from the National Science Foundation (NSF) to start moving the fiscal side of the K-12 Computer Science Standards. He said the standards writing is currently set to start on August 23 through 25, 2017 in Las Vegas. He said they have received the breakdown of the framework from Code.org, and we are ready to start. Mr. Mitchell commented he had not heard any new information from NSF on our grant. Mr. Brancamp said we will move forward, as soon as we get the "green light," with scheduling travel to Las Vegas for the standards writing team that are not within 50 miles. We would like to pay for and arrange all travel for the standards writing team by August 4, 2017.

IX. Discussion on NCLab (For information only)
Dr. Pavel Solin, Professor of Applied and Computational
Mathematics at University of Nevada, Reno

Chair Newburn introduced Dr. Solin, the founder of NCLab, a computing platform that can be used, free of charge. Dr. Solin said he is pleased, after several years, to have received a substantial amount of funding for expansion, and NCLab has hired approximately 20 additional people, including educators, salespeople, and marketing people. NCLab provides game-based courses in coding and 3-D modeling. He commented he is the founder, but there are now multiple owners and he can supply contact information for those industry partners to this subcommittee. He pointed out that NCLab is passionate about training and supporting teachers who are and will remain an indivisible part of the educational process. He added NClab is an integral part of the Nevada Ready 21 program, which is a significant program in Nevada and will continue as a partner for at least six more years.

Chair Newburn asked how many schools in Nevada, and at what grade level, are using NCLab. Dr. Pavel responded currently about 20,000 students in middle schools (middle schools only, because it is in the framework of Nevada Ready 21), with possibly 5,000 students outside of the Nevada Ready 21 program. He added that one year from now, they should increase to approximately 30,000 students within Nevada middle schools. Chair Newburn stated because we frequently discuss Code.org, we have to stay aware there are other organizations and other products available, which is key for keeping everyone aware of NCLab. Dr. Solin added NCLab is a good local resource and different from Code.org in that NCLab teachers come from Nevada schools, they have experience in Nevada and take calls every day to help other Nevada teachers. NCLab is currently located in Reno but plans on expanding into Las Vegas as well. Chair Newburn commented that offering resources and curriculum for these new courses will be key in those community pages for computer science on the STEMhub website.

X. Discussion on Computer Science Strategic Plan (For information only)
Mark Newburn, Chair

Chair Newburn commented that since SB 200 has now passed and we have this legislation and a framework has been created, we can go forward with the CS Strategic Plan. He commented that Ms. Chang has started work on the framework of the Strategic Plan and asked for the subcommittee's review. We need to first look at the deadlines and start pinning down dates. Ms. Chang said we require feedback and input from this subcommittee. Chair Newburn said one thing we may consider is breaking into smaller subcommittees, giving everyone a chance to work in smaller groups.

Ms. Scott asked whether this CS Strategic Plan will become a part of the larger STEM Advisory Council's Strategic Plan or whether it will stand on its

own. Mr. Mitchell replied he believes the STEM Council's Strategic Plan has a couple of areas that specifically call out computer science. The CS Strategic Plan should at least address, at a minimum, the requirements that the overall STEM Council's Strategic Plan lays out. We can use the STEM Council's Strategic Plan as a starting point and go from there with some specific action items that can accomplish the overall goals that have been identified. He added it does not have to be limited by what was written in the STEM Advisory Strategic Plan.

Chair Newburn asked for volunteers for a small working group to assist with laying out the framework of the CS Strategic Plan. Ms. Chang, Chair Newburn, Dr. Solin, and Mr. Mitchell volunteered to assist.

XI. Consider Future Agenda Items for the Next Meeting (For information only)
      Mark Newburn, Chair

Chair Newburn suggested an item for the next meeting include taking a vote on the Computer Science Licensing and Endorsement Requirements. Another item is Discussion on the CS Strategic Plan, and perhaps Dr. Stefik could speak on his work with special needs students and his programming language know as Quorum.

XII. Next Meeting Date will be determined at this meeting.
      Mark Newburn, Chair

Chair Newburn asked whether Ms. Scott needed more time for the subcommittee's vote on CS licensing and endorsement requirements prior to the next COPS meeting, which is August 16, 2017. She replied if we cannot make that timeline, the next meeting is Mid-September. Chair Newburn said it may depend on when we actually start writing CS Standards, which if that is in August, September may be a better time for our next meeting.

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.)
      Mark Newburn, Chair

There was no public comment

XIV. Adjournment
      Mark Newburn, Chair

Chair Newburn adjourned the meeting at 2:16 P.M.