STEM ADVISORY COUNCIL MEETING
October 1, 2014
9:11 am – 10:51 am
MINUTES

The meeting was video conferenced between the following locations:

Nevada Department of Education
Northern Nevada Office
700 E. Fifth Street,
Board Room
Carson City, NV 89701

Nevada Department of Education
Southern Nevada Office
9890 Maryland Parkway,
Board Room
Las Vegas, NV 89163

Present – Carson City
David Brancamp – Co-Chair No

Excused Absence –Carson City
Katherine Neddenriep
Shelace Shoemaker
Nancy Martineau – Support Staff

Present – Las Vegas
Mary Pike – Co-Chair South
Dr. Nancy Brune*
Derek Fialkiewicz
Dr. Anne Grisham*
Wes Harper
Judy Kraus
Richard Knoeppel
Michael Mohar
Sharon Pearson
Dennis Perea*
Dr. Carl Reiber
Missy Young*

Excused Absence – Las Vegas
Dr. Theresa Corry

- *(1)Call to Order/Roll Call: and Pledge of Allegiance (Co-Chair David Brancamp & Michael Pacheco)*:
  The meeting was called to order by David Brancamp at 10:05 am. Nancy Martineau was excused to attend training. Michael Pacheco called Roll Call and verified that a quorum was met.

The Pledge of Allegiance was led by David Brancamp. The Pledge of Allegiance was recited by all members. The microphone malfunctioned and we could not hear the pledge on the recording.

- *(2) Public Comments (Co-Chair David Brancamp)*:

  Co-Chair David Brancamp – No public comments in Carson City
  Co-Chair Mary Pike – No public comments in Las Vegas.

  Co-Chair David Brancamp turned the meeting over to Co-Chair Mary Pike. All present members are in attendance in the Southern location. Mike Pacheco and Andre DeLeon our Committee support from Nevada Department of Education (NDE) are with Co-Chair David Brancamp in the North.

- *(3) Adoption of Minutes and Approval of Agenda (Co-Chair Mary Pike)*:

  Co-Chair Mary Pike requested a motion to approve the agenda. Dr. Carl Reiber made the first motion to adopt the minutes. Michael Mohar made the second motion. The council voted, and no one apposed. The agenda was formally adopted by the Council.

  Co-Chair Mary Pike requested that everyone take a moment and look through the minutes from our July 31, 2014 meeting for any missed items that need to be corrected.

  Co-Chair Mary Pike requested a motion to approve the minutes. Wes Harper made the first motion. Dr. Carl Reiber made the second motion.

  Co-Chair David Brancamp: There are no comments from the North.

  Co-Chair Mary Pike: The council voted, no one opposed, and the minutes were formally adopted by the Council.

- *(4) STEM Advisory Council Sub-Committee Reports(Information)*:

  Co-Chair Mary Pike: Dr. Nancy Brune was not present at this time so we change the order in which this information was presented. We moved to Sharon Pearson for a Possible Approval of School Site and Student Recognition Rubrics.

  Sharon Pearson: She requested that the council take out the STEM Recognition for the Schools, and the Student Recognition Rubrics.

  At the last meeting there were changes requested. All those changes have been made as well as adding any comments that were e-mailed to the Sub-Committee. The council tool a moment to look at the changes.

The council also looked at the Student Recognition document. At the last meeting we discussed an overall idea of what we might do. At this meeting they wanted to present a more formal process. On this one we want to student selection process to begin at the schools, and to be open to any schools. It does not have to be stated as a STEM School, only one from each school who decides to have an applicant. The grades have been listed in here as to what grade they have to be in the second section Student Selection Process". Students selected from Elementary and Middle Schools from the final grade at that school, and High Schools should select at eleventh grade. Requirements will be distribute in September and completed Student packets must be submitted by March 1. The symposium we suggest that they be at the Universities in the North and the South. Give the Students the opportunity to see those facilities and meet professionals in the field. The application is on the second page, the point system, and Teacher recommendation - students need to submit an abstract. The projects may or may not be there, however we need some artifacts/photographs to show that it has been completed and ready for presentation. Also reflection as to how this helped them. On the bottom we ask for a professional expert. At some point during the project we ask that they contact with someone in the field. They have to be able to say yes I talked to this student as an interview or actually helping them; a principal and their parents.

Co-Chair Mary Pike: Does anyone have any comments on the Student Recognition?

Richard Knoeppell: It was discussed during the e-mail process that we might reconsider the dates. Only to take into consideration that high school students may be taking exit testing in some of the program areas. Such as advanced placement exams, and things of that nature. There always tends to be an issue in getting students involved that time of year, especially in high school.

Co-Chair Mary Pike: I think it is great that we are going to include every single school in Nevada. I assume to disseminate we will send to the superintendents and they can send it out to the principals in their district. I like that it states final grade at that school since some schools are just K-3, and middle schools vary, and it is important that we do eleventh grade students. I agree we may need to look at testing. Because in May they have AP and IB Testing at the high school level. We might have to wait until after May 15th. Will this be started September 2015 or is this for this school year?

Sharon Pearson: We have no funding or any way to advertise this, so it looks like next year to make sure that we have the facilities in place for the Symposium and make sure that it is available to the students, and that it is a planned process. We have asked for UNLV and UNR. If they are unable to accommodate this we will have to look for alternate facilities.

Judy Krause: One of the things about the date and later in May would work fine. We were looking at when National Projects are end, and they are typically in February and March. To be able to get it together, I don't think it could happen any earlier than the end of April, so the end of May should work fine.

Derek Fialkiewicz: Are we including the entire State, or just the North and South. If we are including the rural districts, is there funding for travel for the students accepted from a rural district to travel to either UNLV or UNR?

Co-Chair Mary Pike: This is part of what we do need the non-profit at some point, and to see if we get that grant funding.

Michael Mohar: In principal we should be able to find grant funding this. In the Department of Energy they have funds for this sort of STEM activity. I can't guarantee anything, but we may be able to come up with some funding from them. As a former member of a very rural high school, I can't imagine not having the rural communities involved.

Judy Kraus: We were talking about having a virtual meeting for them or having them attend via Skype.

Carl Reiber: Given root we are starting on a shoestring budget, and given that UNR and UNLV have regional science fairs, could this be linked to the regional science fairs North and South?

Sharon Pearson: Do you mean that it would be the science fair or that it would be at the same time as the science fair?

Carl Reiber: It would be linked to and coordinated at the same time so that resources could be shared. Resources like the Department of Energy and National Security Technologies (NSTec) both provide support for the Southern Nevada Regional Science Fair held at UNLV. I don't know about the Fair held at UNR other than they have a lot of sponsors. It might be an opportunity we can link these to and take advantage of the resources and facilities until this could grow into its own entity, or maybe it will work well this way.

Michael Mohar: In principal those events are typically held Friday and Saturday. It would be pretty easy to extend it at least a half of day in either direction. We are talking about a small subset of additional students that would not be a huge additional cost. This is not a bad idea for the first go around.

Judy Krause: Our thinking was a way for them to showcase what they have participated in because science fair is one way to participate, but there are many other ways they can and do participate across the state. If we connect it to a science fair that is earlier in the year I don't know if they will have the projects finished, and the whole process to get one per school to attend. The UNLV Science Fair has really grown in the past few years and is very crowded. Adding another group you would have to come up with another venue because of the space requirements. I have seen it grow, so looking at one per school will be very difficult.

Co-Chair Mary Pike: I see Dr. Reiber's point to use to use available resources as a plan if we don't have funding. The best thing to do would be to have our own event. Member Brancamp how many schools do we have in Nevada? Clark has 357, but I am not sure of the rest of the Nevada.

Co-Chair Dave Brancamp: I don't have an exact number, but I can get that for us. There are a couple of Districts in the North that do a K-3, 4-6, and 7-8 programs. So there could be a potential for a third grader, fifth or sixth grader, an eighth grader, and high school eleventh grader from that particular region for a potential 6 participants. We have to consider that as this plays out. I commend the committee for their great work for what has been presented. For the eleventh graders at the moment we have to consider the ACT is scheduled for April 28, 2015. There could also be eleventh graders playing catch up to the End-of-Course exam around the end of May. These are just some pieces of the puzzle we need to look at while looking for a date. I will go get the number of schools while you continue this discussion.

Sharon Pearson: Maybe with that information we should say the last year of elementary which would be fifth or sixth grade. Whichever is their last year of elementary to focus more directly on the older kids who have more experience?

Carl Reiber: The problem is we lose the kids in STEM early. Rewarding them earlier may be better. Just a concern as we see kids gravitating away from STEM disciplines, especially women. By the time they are in fourth or fifth grade they are heading in different directions. We need to make sure we are rewarding students interested in showing activity in that area.

Co-Chair Mary Pike: Agrees that we are not picking the best project, and not coming up with a winner in that area, it is a symposium. We can still have all the elementary whether you have a third grader or fifth grader. They are still close enough in age that they are together with a group of scientists to separate them out, or STEM professionals. Then have our seventh or eighth graders in middle school work together, and then possibly high school. I still think it will work, and I agree we are losing them by fifth grade. Once they get to middle school they are done. Maybe just science if it is taught in elementary. This is a way to enhance that.

Michael Mohar: Would it make more sense to just say you are going to take a third, fifth, seventh, and eleventh?

Judy Krause: Then why are we putting it would be the highest grade at that school. It should be the one that wants to go and the best applicant up through eleventh grade; as a senior would not get the value out of it.

Co-Chair Mary Pike: Are you suggesting that possibly as Member Mohar suggest we state third, fifth, seventh, and eleventh? Or should we just say the best applicant at your school and the principal submits the name?

Judy Kraus: Yes, that is what I am saying, submit the best applicant at that school and let the principal choose.

Carl Reiber: This may be taking it in a direction we don't want to go. This is a mentoring opportunity thinking about the younger kid's vs the older kids for whatever we do, either a regional gathering or a state gathering. It would be nice down the road with some funding that the older kids take the younger kids under their wing and talk about what they are doing, and why they did it, and where they are going. So the eleventh graders would have already applied to college or been accepted to college. They can start paving the way for the middle school kids, and the middle school kids pave the way for the elementary kids. A mentoring opportunity we shouldn't pass up on.

Co-Chair Mary Pike: I agree, and if we are doing a symposium we hope it would be a day long, and the ideal situation is to bring every kid in whether it is 450 students. We bring them in; we group them first by grade level; and then we intermix them so that we can have them talk to the older kids. If you have been to the National Science Fair it is amazing the skills the presentation when you have those kids and they have to talk to you when you ask them questions. It is so powerful with everything they do and that this is a great chance for our state to shine, and each and every school to shine if they would like to.

Sharon Pearson: I would take it for granted that this is open to private, charter and public schools?

Co-Chair Mary Pike: Yes, it is everybody, not just public schools. It needs to include homeschool as well; with the STEM Council for the State not just the public schools. I believe that is a good point to be on record.

Co-Chair Dave Brancamp: That is how we would distribute it, not only to the Superintendents, but to the District Directors, the Charter School Authority, as well as Dena Dicks to get it to the Private and Homeschools.

Carl Reiber: I like the idea. A word of caution, as I have been involved with a lot of regional science fairs for many years. The private schools dedicate serious time and resources towards the science projects and the kids just clean up. What we are hearing from students who are in Clark County High Schools is that they are not given the opportunity to spend as much time or have the resources as some of the private schools, and feel at a competitive disadvantage. How do you deal with that? It is a reality and would hate to see kids get discouraged that are in the public schools because they see some privates spend 24/7 on STEM. I have no solution to this, but maybe the fact that the competition is there it could raise everybody's expectations. It is something we should have in the back of our minds.

Judy Kraus: That is why we wanted to go towards a symposium. Because it isn't a competition, it is a display of what you have done. Yes, you are going to see the

differences in money, but you are all there for the same reason. I think it will equalize the playing field a little bit.

Co-Chair Mary Pike: If we want to take action on this today the changes would be that just one student is selected from each of the schools by the principal, and at the principals' discretion as to what grade level. We can fix the wording on that, and the symposium will be held the end of May. To enhance that, add it enables every school to include: public, charter, private, and home schools. Member Brancamp is it appropriate to take Acton on this?

Co-Chair Dave Brancamp: Yes, if we can put this into a motion we can take the vote and start the process of getting the word out that this will be held in the spring of 2016. This would be something for them to look forward to and get excited about.

Co-Chair Mary Pike: Does anyone want to make the motion to get it on record?

Sharon Pearson: I will type all the changes that are needed, and move that we accept these changes and accept this document.

Carl Reiber: Seconded the motion.

Co-Chair Mary Pike: The Council voted unanimously in favor to accept the changes and the document. Let's move forward to the rubric. Member Pearson do you have any comments?

Sharon Pearson: This is as stated and all the corrections that were requested last meeting, and are right on course with what has been asked for. I do suggest we do take a moment to look over the document.

Co-Chair Mary Pike: This is a great piece of work. The only suggestion is to space the work curriculum on the bottom of the page, so curriculum integration is together.

Co-Chair Dave Brancamp: I want to thank Sharon and your team on a great job. I second Mary. That formatting issue was my one comment as well

Carl Reiber: I would like to bring up something I brought up last meeting. We still have not linked this to any level of National Standard and I realize there are concerns there. One of the problems we see time and time again in the State of Nevada is that we claim excellence but we have not standardized it, or bench marked it to anything outside of the state, so we are comparing totally internally. That may not be in the direction we want to move. I want to hear some options, and I understand the concerns brought up last time that this could put rural schools at a disadvantage, and schools serving minority low income students. We have to be able to say a school is excellent, not only in the state, but compares to National Standards.

Co-Chair Mary Pike: I recognize that many of the ideas on this document came out of National Research Council documents, Successful STEM Integration and all those documents that were published. I do think there is linkage here, I see it all over the document but I don't think we recognize that. If we do decide to take action to adopt the rubric, at some point we need to come back and have another document that is attached to this that explains who is going to be doing actual looking at the schools, how it is going to be funded, and states that it is attached to the following documents. A reference document that shows it is attached to National Standards. You just wouldn't know by looking at the rubric itself.

Sharon Pearson: We did use rubrics from around the nation. For example we used North Carolina and Virginia. They were very common in their development so we followed their format and their expectations.

Carl Reiber: I understand that, and that it is more a bench marking to expectation of other states. The rubric does a nice job, but it a compare internal. Trying to move to a tier 1 state, historically we have always compared ourselves to those internal to the state and did not get us very far. What we want to do is compare external comparable institutions so we can do a Gap Analysis and move up. We are trying to raise the schools up in STEM areas so that when they say they are a STEM school they are competitive with other schools nationally.

Co-Chair Mary Pike: Good point, but the first thing we need to do as a first year council is go out and survey these schools to see where they are in STEM. Once we have those schools that are model STEM Schools, then we need to compare them to other states to see how they bench mark out. I don't know if we can bench mark until we know what we have. We may have hidden secrets in this state; people don't always tend to find the jewel. For year 1, we need to establish where we are in STEM.

Carl Reiber: I like that idea. If we are creating a cover document, can that concept be flushed out in the cover document? Essentially, what we need is a long term timeframe perspective to be put on this so that year 1 and year 2 we are identifying the resources that we have in the state in terms of quality STEM schools. Then we can start bench marking. This would show that we are looking out for comparative purposes.

Derek Fialkiewicz: I agree that at some point we do want to measure ourselves against the United States, but at this point I don't think we are that place. There are a lot of schools doing STEM and that have STEM programs that are not competing in STEM Our first job is to find those schools and recognize those schools, and then start comparing them to other schools across the Nation. First we have to find them, and not dissuade schools from participating in this and from being a STEM school because they are not competing right now

Carl Reiber: I agree to an extent. We need to identify the schools that are working in STEM and doing a good job. I worry about recognizing schools that might be best in a region, but are not up to a national standard. We need to make sure we recognize a

school in a way that says you're on the right track, and you're doing a good job. It does not do anyone any good to tell them they are tremendous when you compare them to schools throughout the country and they are at the bottom. I think that given a reality check that they are focusing on an area, and they are on the right track, and if you praise them too much or award them too much they get a false sense of where they are in a national perspective. I feel strongly that we have to look at Nevada competing in a National environment. The students, teachers, and the schools have to recognize that we are in a global environment. If a student wants to be competitive when they go to college they will be competing with kids form California, Colorado, and Massachusetts for jobs. If we are going to enhance our student's abilities to get jobs in the STEM disciplines they can't just be competitive locally they have to be competitive on a much broader level.

Derek Fialkiewicz: I agree to a point. We first have to recognize the schools, and we first have to them the opportunity to be recognized. If we put a stipulation that they have to be at a certain level National now, without giving them a chance to build to that level, then what is their motivation to get to that level when they may see there is not a chance to get there? We have to go in steps. I think of Hyde Park when they started Science Olympiad years ago and the first time they won a State Championship they went to Nationals and were second to last. They don't do that now; they are competing nationally because they saw what needed to be done at the National level. If we get our schools to a point where they can look at what is being done Nationally, but still give them recognition of being a STEM school, that will push them in that direction.

Judy Kraus: What is missing out of this document is the evaluation tool you have been alluding to Mary, in that we may have our STEM school recognized, and it may be established, but we may not have a model STEM school when we first do this instrument That's okay, we can recognize them as being a STEM school in our state, and provide them that recognition, and they may not be up to that caliber. We do not have the evaluation instrument done; all we have is the rubric. So keep that in mind.

Michael Mohar: Don't we already have the SAT Testing, and AP Testing that lets us know and benchmarks where student are already are relative to a National level? STEM is not something in itself; it is a religious or a philosophy. You can be Buddhist, a Catholic, or Protestant, but you are still following a religion. You can be an artist, a scientist, an engineer or a factory worker, and you still need STEM skills. We have to be careful that if a school is not designated as a STEM School that this does not mean they are not practicing the art.

Richard Knoeppel: I agree with member Mohar. I think that the discussion revolves around what is the benchmark? A benchmark is different from every area of STEM, and is going to be different at every level of education. What an elementary would look at is going to be very different from what a middle school would look at, and what a middle school would look at is very different from what high school looks at and so on. To be successful I agree with member Fialkiewicz, that we need to get started somewhere. Then we need to look at what the National benchmarks are, because I don't think there is one now. I don't think there is a singular one that is why we are doing this and all the

other states. In the future we need to look at all these things, and that is why we have these meetings. The debate is wonderful and pushing us in the right direction.

Co-Chair Mary Pike: Most of the research I read says that one model does not work for every school. There are so many STEM models out there that you have to figure out what fits for your community, students, parents, and your industry year round. One way we need to make sure this is rolled out is after we decide to approve the rubric, with the caveat we have to other pieces coming, but the rubric is final, is to do professional development for those who will go out and assess the schools. Tell them it is not our goal to make sure they are all model schools; we need to be realistic, and make sure you are reading this and any other evaluation tool we have to ensure it is a fair assessment in every school. The problem is trying to be consistent, and that the consistent message and a consistent evaluation even if you have 10-20 people doing it that the professional development is the same, so that the massage out there is the same. Everybody is a little bias and a little bit different so we have to make sure it is clear.

Co-Chair David Brancamp: To get back to the question asked earlier on how many schools we have in Nevada, Judy Osgood just looked this up for us. We have 646 public schools, including charter schools. If you add in our private schools we are probably around the 700 mark.

Back on the rubric, I agree with Member Pike, this just one of multiple steps. This would be just one step if we approve the rubric today. Back to what was given to us in the laws that we have no more than 15 schools in the state that have to demonstrate exemplary performance. The next piece of the discussion should be what does that mean. Because they see it called in the fields of Science, Technology, Engineering, and Mathematics of which is the exact wording. That is the exact wording, and that is what we were left with as the charge. There is still some discussion with Member Pearson's group to bring back to us in the future. What will that look like, what are the tools we will use, and to give us some history of some of the pieces used from the STEM Coalition, and people who have worked on it? One of the models looked at was Georgia's and that was very strict. The only way they look at some one is if they are on that very far right side. There was a lot of discussion today that this limits people from wanting to try if they can't even get out of the block. So as we looked at this remember as we built a class as a continuum and we can all come to an agreement later as to how we want to recognize up to those 15 schools. Maybe we do like the symposium set so we can recognize people on the pathway to this process and only pick the few. Maybe we don't have anyone at the very beginning that is way out there, but we can recognize people moving towards that.

Co-Chair Mary Pike: No more discussion in the south. Member Brancamp does anyone want to make a motion to approve the rubric?

Carl Reiber: Motioned to approve the rubric, but would like to add to it that the cover page is added where it is putting context, timeline is provided, and what we are trying to do is build towards excellence in these areas. Recognizing that we are starting at a place

and that we want to encourage schools to move forward, and those we are looking at this nationally, and moving in a national context as well.

Richard Knoeppel: Second the motion.

Co-Chair Mary Pike: All in favor to adopt the rubric as is, just with the change to space down "Curriculum" so "Curriculum and Integration" are together. And with the caveat that this is the final rubric, however we do need to come up with a bench mark page, the cover page.   I think the cover page should be brought back for a vote. I think I am modifying the motion.

Co-Chair David Brancamp: Yes you did.

Co-Chair Mary Pike: I need to go back to the first motion.

Carl Reiber: I am willing to modify the first motion to what you said.

Co-Chair Mary Pike: I am not trying to sway anybody; I do think the rubric is final, and I would like to not assume we will adopt the cover sheet as is, we do need to come back. Should we re-due the motion?

Co-Chair David Brancamp: Yes, I suggest we re-due the motion and clarify that the motion is only about the rubric in front of us and that there are other parts that will be brought forth from Member Pearson's team in the future.

Co-Chair Mary Pike: Member Brancamp is that a motion?

Co-Chair David Brancamp: It can be if you want to accept a motion from a Co-Chair.

Co-Chair Mary Pike: Motion by Member Brancamp, and a second by Member Reiber to adopt the rubric as is and caveat that there are other parts and pieces that will come back.

Sharon Pearson: That was our goal, and our hope, that this would just be a start to give us a framework so that we could then move forward to the next piece. We will be back to work for you.

Co-Chair Mary Pike: All are in favor of adopting the rubric as is with slight formatting changes. The rubric has been adopted.

We will now move to Member Nancy Brune to discuss the STEM Survey.

Dr. Nancy Brune: We sent out the survey using Survey Monkey. Thank you to Member Pike for putting that into Survey Monkey and distributing it.   We closed in Mid-September. I just want to offer a few conclusions and responses and then the path forward.

This is a pilot we wanted to get the dynamic out, get some feedback, the difficulties, and responses. We had 89 people answer the survey of which 79% were from an elementary school, 64% were from a large urban district and 11% from the rural districts. A couple people contacted me after the survey had closed from rural districts. I think once we launch this we will have more of a balance between urban and rural.

- 71% who answered the survey said that STEM was offered at their school
- 63% said that they had integrated as something more than just additional Math and Science instruction. This was positive.
- 53% said that their school offered Engineering classes or projects during the day.
- 55 said their school did offer computer based science activities.
- 51% said that they were involved in STEM competitions.
- 25% said their students <u>were</u> involved in afterschool STEM activities.
- 45% said they <u>were not</u> involved in afterschool STEM activities.
- 25% said they had business and industry partners.
- 50% didn't know the answer to that question of having business and industry partners.

In terms of looking at the dynamics, it was troubling to see that we had a pretty significant drop off after question 8, about 15% stopped taking the survey. The lesson being, we need to somehow shorten the survey. After speaking to my daughter's principal, her responses from her teachers was that this was way too long. I have taken the liberty and identified some questions that might be duplicative. We might be able to remove then and then when they see there are fewer questions they might be able to get through the whole survey. Is proper now to go through those and have approval?

<u>Co-Chair Mary Pike</u>: Maybe we could have some discussion before that from people who took the survey. I know it was taken at some of your schools; did anyone from the Council actually take the survey?

<u>Judy Kraus</u>: One of the things I noticed is that I was giving repetitive answers. Narrowing down the survey would definitely be beneficial to getting more respondents.

<u>Sharon Pearson</u>: Also the timing wasn't the best to administer the pilot at the beginning of the school year.

<u>Co-Chair Mary Pike</u>: Member Brune would you like to talk about possible questions?

<u>Dr. Nancy Brune</u>: Do you want me to go ahead and go through each question, and then we can approve, or take an action on each question off of my suggestions, and then approve as a package?

<u>Co-Chair Mary Pike</u>: If everyone has a copy in front of them. We can write down the numbers and then go back and decide.

Dr. Nancy Brune: The questions I thought we could remove (using the numbers given in the Survey Monkey):

- # 6 - How long have you been an educational professional?
- #7 – Do you offer STEM education in your classroom during school the day?
- #8 – Does your school offer STEM education during the school day?
(#7 & #8 were too close to the same question, the answers did not very)
- #11 – Is a STEM curriculum in your classroom multidisciplinary to include integrated STEM lessons in all content areas?
- #12 – Is the STEM curriculum in your school multidisciplinary to include integrated STEM lessons in all content areas?
(#11 & #12 were too close to the same question)

These are the questions where I thought we could remove one.

Derek Fialkiewicz: When you say to remove one, I am assuming you mean to combine them. Do you have a suggestion as to whether we are going to remove the school one, or the classroom one?

Dr. Nancy Brune: I am open to either, or we can say school and/or classroom.

Derek Fialkiewicz: Okay.

Dr. Nancy Brune: The next sets of questions are:

- #19 – Are your students in your classroom regularly challenged by complex problems related to real world scenarios?
- #20 – Are the students in your school regularly challenged by complex problems related to real world scenarios?
- #30 – Does your state licensure department offer a STEM endorsement for a teaching license?
(95% said they didn't know, so if they don't know are we getting anything by asking that question? My suggestion is to remove it.)
- #32 – If you do not have a business and industry partner, have you reached out to any businesses?

I think given the responses from the previous question "Does your business or industry partner involved with STEM education at your school?" Given that the answer was largely no or I don't know is this a question we can remove without losing any information? Those are my suggestions as to where we could remove or combine questions to make the survey seem shorter. Are there any discussion or concerns?

Michael Mohar: So if we make these changes will we be down from 35 to 30 questions?

Dr. Nancy Brune: Yes, 29 or 30.

Michael Mohar: Is that really going to make that big of a difference? If you had a real big drop off after eight questions, does it make sense to maybe do multiple surveys with ten questions at a pop? Don't know that eliminating 5 or 6 questions is going to make that big a difference in how far people get in the survey.

Dr. Nancy Brune: The likelihood that people will respond to several surveys even if they are shorter is slim.

Judy Kraus: I was trying to look at the ones I was giving repetitive responses to and it was 8b and 10b

- If STEM education is being integrated as something other than adding additional science and mathematics instruction courses in your school, how has it been integrated?
- If your school does offer engineering courses or projects, what are these courses or projects?

I was answering with the same response. Even though they are worded differently, I think they can be combined. If we can combine some of the narrative ones to lesson it, and have more yes or no that people will respond to, other than multiple typed responses that you find you are answering the same thing in another question gets to be time consuming.

Co-Chair Mary Pike: We do Survey Monkey's after every professional development session we do and I am constantly reading the results. And the ones where you can just click yes, no, maybe, of course we get all those, but we do not get comments very often. I am torn because that is where you get valuable information. People who are really dedicated and who are interested will fill those out and we will get valuable information. So I hate to cut all of them, but that one because you see similarity in the answers and when you look at the results and they are about the same, maybe we could do one of those. I agree we are not cutting it down very much. It is difficult because when this was developed this was the information we wanted to gather. If someone choses to stop taking the survey, this is not a good thing, But, we still might get good data. We haven't even finished the State of Nevada. My other concern when you look at the results is this is already 56 pages from only 86 people.

Michael Mohar: Part of what my company does is training for first responders, like fireman, cops, paramedics. We had typical classroom surveys we give out afterwards. What we found out was the way we were asking the questions was directing how the answers were going to come out. What we really found out is it is a true art form to make one of these surveys. Given that, we have a couple of Universities in this town and in the state. Would it make sense that we could tap into the psychology or sociology departments to enlist some help to go over the information we are trying to extract. I am acknowledging that it is really hard to put

together a good survey. Sometimes it is worth going and getting additional expertise. Is that something we can make happen?

Dr. Carl Reiber: UNLV does have the Cannon Service Center; unfortunately it is a fee for service entity if we do look for help. I would say that a lot of the surveys UNLV puts out are just two people sitting in a room. They are not particularly scientifically designed. There is a lot of criticism for that and we do have folks that do this for a living. It is not my area, and I could not tell you if it makes a difference if the professionals do it versa UNLV. I really don't know. We certainly could try to enlist someone who could help streamline things or make sure that we are asking the questions we think we are asking. That is the main thing with surveys, is you think you are asking one thing and you get responses to something slightly different then it askew your survey in a direction you hadn't planned.

Co-Chair Mary Pike: Because I know that Member Brancamp and I as Co-Chairs have to write a report that is due to the Governor by January and we need data. Part of the task was to survey Nevada and other States. My concern about changing it for the State of Nevada is maybe we leave it the same even though it is long. Maybe we leave it and disseminate it as is to the State of Nevada. Go ahead and send it out, I know this was the pilot and it is going to be a lot of work and not everybody will finish it. Get it out to everybody so we can compile the result for the next meeting and look through them. Then, if grant funding comes through, then we design a survey for states other than Nevada. The only question we would modify now would be "What State do you reside in?", because it will just be Nevada and that was a lot of pages of just blanks. We truly try to modify it so we get some result. We do need to survey them, but since we already started with this I hate to start over again. Then we won't have the same data. We will askew the data for the state.

Dr. Nancy Brune: I want to remind out sub-committee that I don't know if we need to revise this for other states because we did draw on two National surveys. I think those were done by nationally widely respected organizations. I imagine they did have experts come in and help phrase the questions. I think we are probably in good shape and wouldn't want to push back to revise it again.

Dr. Carl Reiber: If you used surveys that were put together by other entities then they probably have vetted and appropriately looked at, so my bigger concern is if we would askew our data if we revised it now. Getting the data at this time is more important and I would assume the survey like this would be given periodically in the future. So if it needs to be revised in a year or two years then we revise it.

Dr. Nancy Brune: I did a lot of surveys in graduate school and we usually saw a 50% drop out rate, so 15% in all is pretty good, just to keep some perspective. But I do think having 6 questions less could help.

Dr. Carl Reiber: Given the context, I back off.

Co-Chair Mary Pike: I do know with the number of schools we sent this out to, that we only had 89 people who took the survey. It is going to be valuable data to figure out the enrolment of what that entire school was, because we certainly did not get every teacher at those schools. That is a big concern with me because I am sure it was well over 89 teachers. I don't know how many didn't respond.

Member ???: We have been surveying for the GEAR UP professional development and our survey responses are about the same. I think our society right now is just surveyed out. Our teachers are getting bombarded with surveys so your response rate is probably what we are going to get. I think we have to accept we are not going to get a 100% compliance and we are going to have to use the data. There are certain assumptions when you send a survey out that is skewed towards those who are interested in filling the survey out. I think we have to accept that at this point in time.

Dr. Nancy Brune: I would also add that I don't believe when we sent the pilot out we were not clear in our instructions. Point of contact could have used their discretion and just sent it out to the science teachers. In my daughters school it is not clear that the principal sent it out to every single teachers. She may have just asked the science teacher or STEM Coordinator. Maybe having a cover letter where we ask them to explicitly to have them send it out to all teachers at the school to help us figure out what the sample size in theory should be.

Co-Chair Mary Pike: Since I did send out the e-mail out I thought I made it perfectly clear to send it to every single teacher in the building, but who knows what happens after that. That really is a valid point.

Judy Kraus: What I did was I actually went to the survey first, and then I copied your intro to the survey into my e-mail to the school so they had some contacts to go along with it.

Derek Fialkiewicz: Do we have some type of e-mail data base where we could send it directly to the teachers? I know in Clark County that is not a possibility.

Co-Chair Mary Pike: Interact will not send a mass e-mail out to every teacher. If I could get it as a pop-up on Interact, of which I probably could do. However, as the teachers in the room are smiling because if you get an Infinite Campus update every single day, I know that a lot of teachers just click out of those and never go back to them. We can try to do it a number of ways, but that would just be for Clark County. For the State we are going to have to rely on the Nevada Department of Education for dissemination. Member Brancamp would you like to comment?

Co-Chair David Brancamp: The States access point is we can get it out to all principals, but we do not have access to teachers. We would be in the same bind that you are describing. The other side, to jump in on what has been discussed is we will have that same time crunch, because we are at the first of October. At some point you

will need to let us know what would be the time you need to turn that data around. When we close the survey we need this data ready for our meeting in January because our report is due on January 31st.   Those are the restraints we are putting in at the moment. This is something we need to think of as a committee. Let's hope we can move the survey forward then we can always make adjustments and we can say that in our report if we want to do something different in the future. Those would be the bounds in which I don't think you want to spend your entire winter break doing. When would we close it and how long do you need help to get some of the material put together?

Co-Chair Mary Pike: The survey results are not that hard to pull. You just export them, and will just be a lot of pages. I don't know, and I don't think Survey Monkey has a maximum number of responses that it can accept. I don't think it does, but it certainly is something to find out. I am not worried about collecting the data because we can do that in just one pull. I do think it needs to close, and the longer it is open you don't get that many responses after a while. In the beginning you get a bit hit. We need to figure out a plan, and I would definitely say if it is approved, and we get it out by the middle of November, we should close it December 15th or the last school day before winter break. We are going to need assistance from the Nevada Department of Education to get this out to other state agencies because we don't have contact there.

Co-Chair David Brancamp: We can definitely get it through the District Directors through all the District sites, and then go through Judy and Dale if we want it to go beyond educational institutions that are beyond K-12. We would have to rely on them to get that posted and out. Off the top of my heard the Superintendents meet tomorrow, and not again until November. We can do it by e-mail to them to make them aware that something is happening before it hits the District Directors so we don't upset anybody in leadership. These are some things to put on our calendars.

Co-Chair Mary Pike: Member Brancamp do you attend those meetings with the Superintendents?

Co-Chair David Brancamp: Not unless our State Superintendent requests your presence. Usually he takes his Deputy and they are the only two who attend. But I could let him know today, if we craft something rather quickly and put it out if they are meeting tomorrow. If that is the decision of the Council and we approve the survey.

Michael Mohar: If we approve the questions today, and make the 6 changes, plus combining the two questions recommended, is that going to skew the results?

Co-Chair Mary Pike: I am not sure. I will have to the survey and re-craft it to make the changes. However, I am not in the office for a while, I am out all next week. I can do that but I don't know how much it will skew the results. I think it will some, so I don't know if they are big enough changes to make a difference in responses, I

don't really think so. I agree there are duplicates, but I don't think it will change the response rate.

Derek Fialkiewicz: Like Member Mohar said at the very beginning of this discussion, that deleting 5 or 6 questions from a 35 question survey will not change the number of people who are going to complete the survey. Therefore, I believe we should leave it as is and run with it, and see how it goes. Then we won't run the risk of skewing the results.

Michael Mohar: Is that a motion?

Derek Fialkiewicz; I motion that we leave the survey as is, and move forward with the survey.

Judy Kraus: I second the motion.

Co-Chair Mary Pike: Any further discussion. All were in favor. The survey has passed. Member Brancamp will let Superintendent Erquiagua know it will be coming out. We can get the verbiage on a cover sheet, and do what Member Krause did and copy the front part of the survey on the letter. Just for a discussion point, probably if I send this to Member Brancamp I am not sure what type of letterhead it needs to go on. It is a Governor's advisory council so that might be something to think of, and then I can get it to Member Brancamp.

Co-Chair David Brancamp: If you can get that to me we can get that taken care of making sure it is on the proper letterhead and get it out. We need to know the dates the survey will open and when it will close.

Co-Chair Mary Pike: That is fine; I think we said the middle of October through the middle of December. Any other comments? No comments. As soon as I send it to Member Brancamp it will be open on my end and close the middle of December. We will close as close to December 15th as we can by making sure it is a Friday.

Just for the record, Dr. Brune did arrive, Dr. Reiber just left, and Ann Grisham is here.

Co-Chair David Brancamp: Thank you, that helps Mr. Pacheco keep count.

Derek Fialkiewicz: Looking at the calendar, December 19th is the last day of school before winter break in the South, and I think that would be a good day to close the survey.

Co-Chair Mary Pike: So noted.

Co-Chair David Brancamp: What we can also do once we have this all set is a reminder to the District Directors at the District Directors November 20th meeting that

we are about half way through the time to take the survey, we will make sure that is publicized again in November.

Co-Chair Mary Pike: Thank you. We are still on agenda item #4, and ready to get a report form Member Mohar.

Michael Mohar: Looking over the minutes of the last meeting I see there was conversation on the RFI, and that the RFI was supposed to go out. Unfortunately I didn't follow up with those folks. When that information came to me, initially before that meeting it had already been reviewed by legal counsel and they were good with it. My understanding is that we were going to bring that language forward, approve it, and Department of Education was going to send it out as solicitation rather than an RFI because there is no funding backing it up. I have to apologize, because we are falling into the new Federal Government fiscal year (Happy New Year) and it happens to be the busiest time in my business so I have been kind of a slacker lately. It is my feeling that we don't have any additional action, maybe other than to formally approve the solicitation. It wasn't clear to me in the minutes if that was even done. Member Brancamp do we know what the status of that is right now?

Co-Chair David Brancamp: Where we are stuck, and Co-Chair Pike will second. Unfortunately, what has happened with how this was written, in the law neither the Nevada Department of Education or the Districts can solicit this document. So what we are looking at is today we can go ahead and move it forth, and we are looking at someone in a private setting, or something to move it forth. Superintendent Erquiaga does not want that through, and will not run it through with legal saying it should not be run through the department. After talking to Co-Chair Pike it would be similar out of the Districts. It puts us in a very interesting position. We are back to the council at this point to say is there a member on the council that could run it through their set, and we would still do the review and bring it forth like we already discussed. That is where we are at with the solicitation process at this point. We need a volunteer to step forth that can fit that within their legal bounds.

Michael Mohar: My understanding as a humble nuclear scientist, I am not a lawyer by any shape or form, but I have done a lot of solicitations. The requirements for solicitation from this kind of support from a non-profit, is my understanding since there is no money changing hands that there is no legal requirement to ensure that there is an open state sanction to prove solicitation. My gut feeling is that we as a committee, is that it simply requests that non-profits within the State of Nevada submit to us directly. The information that was drawn up in the draft and that we could as a committee decides that one or a group of these organizations we would choose to work with. Do we need to get additional lawyers involved to make that determination, or can we go out and do it and see what happens?

Co-Chair David Brancamp: It really would be who is the collector? As a council that is under our jurisdiction to make sure that happens. Who is the collector, does it come into the Department of Education or does come into Clark County to Co-Chair

Pike? It is recommend to State Superintendent Erquiaga by the Attorney General not to go that way. I am not a lawyer either, but that is their recommendation. It would be who is the person that these get sent to as the solicitor. So if some of the people we know that are interested that want to apply, who do we have them contact, and who do we have them send these forms for information to?

Michael Mohar: Hypothetically, could it be care of to an individual address? For example: On behalf of the STEM Advisory Council send your response to Michael Mohar at his address? I can tell you right now that NSTECH will not be a party to this; it is not something that is part of their contract. It is not something they could enter into. But, I as an individual citizen, as a member of the Grants Committee could say yes, send it to me at this address, and I could do that collection as long as there is no problem with the State on that.

Co-Chair Mary Pike: I personally don't have an issue with that, but I do have an issue that there is no way I can use Clark County obviously, and especially the Department of Education. Especially because most of the non-profits that work with STEM, I already work with in my job capacity and I am putting that on the record because at the end I probably won't be voting. I will recuse myself from the vote, as I don't want impropriety there. I don't see an issue because as your role on that sub-committee, does anyone want to weigh in on that?

Co-Chair David Brancamp: Member Mohar if that was acceptable on your behalf it would be officiated, because unfortunately, I sit in a similar position as Member Pike. Many of those people who have at least expressed interest to potentially be our non-profit have contact me personally. That is where I think our Assistant Attorney General is really hesitant to go out on that. Member Mohar, if other members are acceptable of that, and you are willing to do that, I don't see it as a problem. That is where the issues are now.

Michael Mohar: To protect myself from my copious number of stalkers I actually have a post office box that I could use as the address. I am interested as to what Member Grisham has to say and other members.

Dr. Anne Grisham: I think I would not be in as much of a situation as our two Co-Chairs. The reality as a school principal in Clark County, there is always you can take it to your house. But, I am not comfortable doing that, but if you are comfortable doing that I am good with it as long as the information is shared with the Sub-Committee before it comes to the Council.

Michael Mohar: The process that I would propose for this is we get a public announcement out, and there is a period of time responses can be collected at an address I will provide. I would then distribute all of those responses to the Sub-Committee members, and we would make a recommendation to the Council for full approval. There is also the question how we get a public announcement.

Co-Chair Brancamp: For the record, Judy Osgood can help get the public announcement out. She would need the deadline, the form, the address you want any information sent, and who would be the contact if they had questions. Those would be the three things Judy Osgood would ask us.

Michael Mohar: I can set up an e-mail as well to collect any questions. Principally we want to do this as soon as possible. Typically you want to leave a two week time period for a response. If I had the e-mail address, and mailing address for the submission, can we require that they do the submission by e-mail?

Co-Chair Mary Pike: I don't see why the STEM Advisory Council would think that would not be appropriate. If they can't figure out how to submit by e-mail maybe they are not a good STEM non-profit.

Michael Mohar: This becomes much easier then. I will have the questions e-mail address, the submissions e-mail address, and submissions open between October 15 - 31, 2015. Within the next couple of days I will send the contact information, and I am assuming that the language of the initial solicitation was approved. Or do we have to approve that again?

Co-Chair Mary Pike: Member Brancamp, I don't remember if we had a motion to approve that language. I believe we did, but I don't have to old minutes here.

Co-Chair David Brancamp: Give me just a second to look through them. I do remember Member Mohar was not at the last meeting so we may not have approved them.   Those dates are good, and Member Mohar if you could send me that information when we are ready I will make sure Judy Osgood helps us to get that out.

Co-Chair Mary Pike: While Member Brancamp is looking through the minutes I have a question. So you recommended that we open on October 15th and close on October 31st? Do you think that is a big enough window, is that what you said?

Michael Mohar: That is what I would recommend. As a person who writes a lot of proposals, it would not be the shortest time ever for a proposal. I thought the questions for information were pretty straight forward. I would imagine that people would be able to submit in that period of time, I can have e-mail addresses ready by the end of this week or sooner. We can start sooner, but I think the end date of October 31st should be a hard deadline. We have to be able to meet our requirements to review and approve.

Co-Chair Mary Pike: That's fine. I know one agenda item is that we want to get them back so your committee can meet, and give a full report at the next Council meeting so we can actually vote on them and then Co-Chair Brancamp and I can put that in the report to the Governor. I think that is huge. Because that means we have made huge progress in just a few meetings we have had.   I think our first meeting was on February 14th and that means we have done a lot of work in just the first year.

Co-Chair David Brancamp; in out minutes from the last meeting on pages 28 and 29, there was discussion on whether it was an RFI or just a solicitation. The motion at the very end was to move forth and carry forward as soon as possible as a solicitation or an RFI. Anne Grisham moved to carry this forward, and second by Theresa Corry, and it was passed. Member Mohar as long as you have the document from legal, because that is the way this reads, apparently there was some document, we can get that moved forth. We don't need another motion, unless people want to motion that this is the plan to move us out. There is some document out there.

Michael Mohar: Just for clarity, I sent then language, and what I got back from them was a letter saying yes this language is good, and you can move forward with that language. My proposal would be to submit that as the solicitation without change.

Co-Chair Mary Pike: I think for clarification that someone should make a motion for the timeframe, that we are all okay with the procedure, and that we will take the language from that and get it submitted.

Richard Knoepell: I make a motion to accept Member Mohar's timeframe for the solicitation.

Dr. Anne Grisham: I second.

Co-Chair Mary Pike: We have a motion on the floor to accept Michael Mohar's timeframe. All were in favor. The motion passes. We will move that forward.

(5) Additional Opportunities for STEM Advisory Council to Learn About STEM Activities in Nevada (Information/Discussion/For Possible Action):

Co-Chair Mary Pike: Are there any members that have upcoming information on events?

Derek Fialkiewicz: There is the Southern Nevada Math Council, and I hope Southern Nevada Science Association as in the process of putting together a Math and Science Conference. We are hoping the date will be January 16 & 17, 2015 at Clark High School. As soon as I get more information on that I will send it out to the Council.

Co-Chair Mary Pike: There is also a STEM Conference for Nevada Science Teachers in Reno on November 8, 2014. There is more information on that, if anyone is interested let me know. That is a four day weekend for Clark County so I don't know if anyone will go to Reno to attend.

Co-Chair David Brancamp: Just to clarify an e-mail that was send by Nancy through Beth Wells about the opportunity of STEM X that she was very excited about. I wanted to make sure everyone had that, and if you don't call or e-mail me today so I can have Nancy check her e-mail when she returns to the office.

Co-Chair Mary Pike: So noted, there are no other activities to report

- ***(6) Future Meeting Dates and Agenda Items (Information/Discussion/For Possible Action):***

David Brancamp: Co-Chair Pike and I were talking on how we are going to structure this and will probably need a meeting in January to share all this information. Hopefully we will have a non-profit that Member Mohar's team can bring forth, and information from the Survey Member Brune can share. Co-Chair Pike and I will have a draft of the report to share to have your approval on it. That is due by January 31st. The State Board has not selected a date for January. Can we look on our calendars for the week of January 12 -16?

Co-Chair Mary Pike: January 16 is the last day of the semester in Clark County, so that is definitely not going to work for many people here. Member Mohar said the week of the 5th.

Co-Chair David Brancamp: The week of January 5th Washoe County is still on break. That could impact attendance for a couple of our members.

Co-Chair Mary Pike: Member Mohar is looking at January 12th as a possibility. That is a Monday, and as I recollect, the State Board does not meet on Mondays.

Co-Chair David Brancamp: That is normally correct. If the members agree I can at least push it, that would be the only thing in our way. We are considered one of the Councils at the Department but the Board could trump us. I think we would be safe.

Co-Chair Mary Pike: Any discussion on Monday, January 12th. Everyone in the South is good with that date.

Co-Chair David Brancamp: That I clear on my calendar. I will check on rooms as soon as we are done. I will then let everyone know that is definite date.

Co-Chair Pike: Thank you Co-Chair Brancamp that would work. The other agenda item would be the draft cover document for the Rubric. The sub-committee can get back together and draft that document.

Sharon Pearson: Yes, I want to add that to the agenda because we will work on it between now and then.

Co-Chair Mary Pike: Any other discussion on agenda items?

Michael Mohar: Add the formal approval of recommendation of the non-profit to handle the grant from the sub-committee.

Co-Chair Mary Pike: So noted.

- ***(7) Public Comments:***

  <u>Co-Chair David Brancamp</u> – No public comments in Carson City

  <u>Co-Chair Mary Pike</u> – No public comments in Las Vegas.

- ***(8) Meeting Adjournment:***

  <u>Mary Pike</u>: We need a motion to adjourn the meeting.

  <u>Michael Mohar</u>: Motioned to adjourn the meeting,

  <u>Richard Knoepell</u>: Seconded the motion.

  <u>Co-Chair Mary Pike</u>: All are in favor. Thank you for a productive meeting.

  <u>Co-Chair Dave Brancamp</u>: Thank you everybody.

  Meeting adjourned at 10:51 am

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