MTSAC0117
STEM TP2
Final Transcript

Iraj Nejad
There is a critical shortage of qualified math and science teachers. California would need close to 33,000 math and science teachers by the year 2025. The STEM Teacher Preparation Program or we call it STEM TP2 is to train the future teachers and I believe it is an excellent, excellent example of a collaboration between a two-year school and a four-year school that can work together. We wanted to recruit the students who have interests and potential to be future math and science teachers.

Kris Houston:
Collaborating with Mt. San Antonio College has been great because we've been able to interest students that are thinking about teaching math or science and allowing them the opportunity to take that course and then if transferring to UCI they would be on track to graduate within four years just as if they had been attending UCI all along.

Jessica Pratt:
We're hoping that it makes the transfer to any university easier. One way we can do that is by allowing students to cross enroll in courses here at UC Irvine while they're attending community college.

Iraj Nejad:
You have four components in the 15-month program. In the summer we have a three-week program which is called Summer Science Exploration Experience or we call it S2E2 and we bring about forty middle school students. We have many many hands-on activities in all areas of STEM.

Charles Newman:
The cohort students, the selected students for the program are actually the teacher / instructors through most of these activities.

Cheyenne Farnsworth:
There's about four training days for us and we learn all the experiments that we're going to be teaching by the professors from other colleges.

David Brown:
So I'm going to light the end of the candle with a little black wick.

 Charles Newman:
We have to make sure that there's kind of a community and a group, a gluing together where they enjoy each other's company and they can communicate and work together well.

Natalie Strasburg:
By day two we're already all close, we’re already texting each other, we're already friends, we’re already planning on taking classes together in the future.

Charles Newman:
The S2E2 summer science camp is a really really good entre for those students that think that they want to be teachers. And it's kind of like okay here's your first experience. This is hands-on close in work not standing up and lecturing.

Natalie Strasburg:
You're literally diving right in with them and not only are we teaching them but we're learning a lot ourselves.

[Sound up] We just want to make sure that you can actually touch them…

Jeremy Fortier:
What it allows us to do is dip our feet into different sciences and gives us a better understanding of the whole of the scientific community. We may not be experts it but allows us to learn and develop different skill sets.

Larry Redinger:
One of the really exciting things about this program is that we are able to now take a math major at the college and they see what science is all about. And we see these science people that see how this math is working. It's powerful because now I can incorporate that into how I teach.

Tammy Fortier:
The whole experience here with S2E2 for me has been almost life-changing it's given me a new perspective on what teaching is and being a teacher.

Charles Newman:
The second component is a classroom experience at the University of California Irvine where they take a course that's called introduction to science and math teaching.

Kris Houston:
The course is typically a three-hour session the first half is talking about either pedagogy or methodology for science and math teachers and then the second half of class is an actual hands-on lesson when they get to experience math or science in a way that they probably didn't experience when they were in school.

Karina Galvan:
For me it was the student teaching. Being in the classroom, knowing that I could actually do it, that I was actually comfortable with the experience, that I was good at it. It reinforced this is what I want to do for the rest of my life, teach.

Charles Newman:
The third portion is actually a course that's called Introduction to Research Methods for Future Science Teachers and that's a course that's taught partly at UCI and the other half is up here at Mount San Antonio College by UCI faculty.

Iraj Nejad:
The students take that course in the spring semester and they learn about the process of research.

Said M. Shokair:
The research process in general follows scientific methods. You’re defining a problem or a hypothesis and then you discuss methods or approaches on how you’re going to tackle that problem. We're excited about this collaboration because we introduce them to the methods, through the research methods course but then they apply what they're learning in a project working with a faculty mentor.

Charles Newman:
The students that complete both the fall and the spring courses are eligible to conduct research at the University California Irvine or at Cal State Fullerton or at Cal Poly Pomona.

Jessica Pratt:
Research is what provides the body of knowledge that the teachers end up teaching. So, it's what connects the textbook and classroom content and information with the real world.

Said M. Shokair:
Get a taste of the discovery process and coming up with some results because we want you to translate that energy and that passion to your students when you become a teacher.

Therese Shanahan:
After that first experience some of our students have a fire lit in them and they go, ‘Oh this is exactly what I want to do with my math and science career.’ They network with each other, they bond with each other, they support each other and they rely on each other.

Natalie Strasburg:
Now I know that this is the path I want to take already, it's already what day three? I'm like I'm going to be a teacher.

Charles Newman:
If we can capture them early enough and actually expose them to how exciting, how rewarding and how internally satisfying it is to teach that I think there's a higher probability that those students will be successful.

Jessica Pratt:
One of the best ways to form these relationships and have local community colleges working with their regional four-year universities is really through developing program specific grants and pathways that are designed for increasing the transfer rate.

Iraj Nejad:
What we have is a structure that we offer for replication, but this structure can certainly be tweaked to fit the particular institution and work with the resources that they have.