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PAYDIRT

KTEK Radio Interview
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Winding Down
November 25th, 2019



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SGA Meeting Rundown: 11/19/19

1. There was an appeal made regarding the decision of the Supreme Court on the President's Oct. 22nd executive ruling that challenged the VP's decision to deny certain 'late' clubs status (more in previous issues). As per the Constitution, Dr. Phaiah, Dean of Students, looked at the issue and upheld the Justices' ruling.
2. With the number of Justices that ran during last week's election, the Supreme Court will finally have all positions filled. These offices have recently become paid positions, and this is the most likely cause for the increase in interest. Previously, they were all volunteers.
3. The SATD is looking to hold more club events in the SAC, especially on weekends.
4. The SAC will host a study session in the SAC on the Sunday, Monday, and Tuesday of finals. All three seasons of Avatar: The Last Airbender will be playing in the background.
5. The SGA outreach event that was held a few weeks ago may become a biweekly event so students can ask questions about their student government, their Constitution, their senators, etc.
6. The Legislative committee is looking to amend the Constitution, with their goal being to avoid confusing or problematic wording.

Bosque Del Apache

Check out the Bosque Del Apache National Wildlife Refuge Visitor Center located in San Antonio, NM. It's only a 30 minute drive!



Photos by: Samuel Baca

Letter from the Editor

Hello again! As the semester comes to a (perhaps climactic) close, we at Paydirt wanted to try and give you, our readers, as much variety as possible. We covered some science and research in Dr. Piyasen's lab, looked at some of our talented student athletes, and relayed a brief history about KTEK. Outside of the newspaper, we recently put out a few copies of DIRT around campus, our satirical reporting rivals.

However, as we head into Spring 2020, I want to stress that we are your newspaper. Harking back to what Casey Aumack said about KTEK, this organization is by students, for students, and we can cover whatever you want us to. We will always be trying new ideas, following new stories, and listening to your feedback.

Following that same vein, I want to thank everyone who participated in the Cards Against NMT giveaway poll, as it gave us much needed information about you and what you want from us. Due to the success of that first poll, we will be sure to have more in the future, so if you did not a deck of Cards Against NMT last time, be on the lookout for our next survey.

The rest is on us. From our poll, we estimated that somewhere between 300 and 400 people read our newspaper, and I want to make each and every one of those readers interested in what we have to offer. To accomplish this, I will be hiring a new Journalist for next semester so that we can offer up more and more content. If this is something you are interested in, send me an email at paydirtnmt@gmail.com.

Thank you for reading Paydirt. Let us know what you think, and we'll act on it. Oh, and good luck on your finals!



Tech is known throughout the state as a difficult school, and for good reason. By this point in the semester stress levels can be so high you get folks yelling "It's a bird! It's a plane!" at them. And it can be hard to recognize the problem until something pushes you over the edge. Then, suddenly everything from doing that one assignment to even getting up in the morning can feel overwhelming.

Look around. In your classes, in your dorm, around campus, chances are high that you are in good company if you are feeling stressed. We all have rough days and you never know what someone else is going through. But, look again! We're still here, making it through and learning and maybe even having some fun while we're at it.

So, just remember that you are not alone in this. There are more people rooting for you than you might think. I sure am. And you got this.

Credit Eponis Sinope for these tips.

Are you hydrated? If not, have a glass of water.

Have you eaten in the past three hours? If not, get some food — something with protein, not just simple carbs. Perhaps some nuts or hummus?

Have you showered in the past day? If not, take a shower right now.

If daytime: are you dressed? If not, put on clean clothes that aren't pajamas. Give yourself permission to wear something special, whether it's a funny t-shirt or a pretty dress.

If nighttime: are you sleepy and fatigued but resisting going to sleep? Put on pajamas, make yourself cozy in bed with a teddy bear and the sound of falling rain, and close your eyes for fifteen minutes — no electronic screens allowed. If you're still awake after that, you can get up again; no pressure.

Have you stretched your legs in the past day? If not, do so right now. If you don't have the spoons for a run or trip to the gym, just walk around the block, then keep walking as long as you please. If the weather's crap, drive to a big box store (e.g. Target) and go on a brisk walk through the aisles you normally skip.

Have you said something nice to someone in the past day? Do so, whether online or in person. Make it genuine; wait until you see something really wonderful about someone, and tell them about it.

Have you moved your body to music in the past day? If not, do so — jog for the length of an EDM song at your favorite BPM, or just dance around the room for the length of an upbeat song.

Have you cuddled a living being in the past two days? If not, do so. Don't be afraid to ask for hugs from friends or friends' pets. Most of them will enjoy the cuddles too; you're not imposing on them.

Do you feel ineffective? Pause right now and get something small completed, whether it's responding to an e-mail, loading up the dishwasher, or packing your gym bag for your next trip. Good job!

Do you feel paralyzed by indecision? Give yourself ten minutes to sit back and figure out a game plan for the day. If a particular decision or problem is still being a roadblock, simply set it aside for now, and pick something else that seems doable. Right now, the important part is to break through that stasis, even if it means doing something trivial.

Have you seen a therapist in the past few days? If not, hang on until your next therapy visit and talk through things then.

Have you been over-exerting yourself lately — physically, emotionally, socially, or intellectually? That can take a toll that lingers for days. Give yourself a break in that area, whether it's physical rest, taking time alone, or relaxing with some silly entertainment.

Have you waited a week? Sometimes our perception of life is skewed, and we can't even tell that we're not thinking clearly, and there's no obvious external cause. It happens. Keep yourself going for a full week, whatever it takes, and see if you still feel the same way then.

You've made it this far, and you will make it through. You are stronger than you think.

Go. See. Do.

"As you think, so shall you become." - Bruce Lee

Caleb Cheng and the Martial Arts Club

Although renowned for its excellent academics, NMT boasts some talented, sprinkled in athletes. I recently heard that one of our martial artists entered a tournament over 6 different disciplines, and won in each. As such, I decided to interview Caleb Cheng about his achievements and the Martial Arts club.

How did you get into Martial Arts? What year and major are you?

C:I'm a third year; a junior in Computer Science; I'm 20 years old. I've been doing Martial Arts for 13 years now. [My] parents forced me, but it's been really good, it's been a key part of my development. I definitely recommend it to all the kids out there.



What are your inspirations for practicing Martial Arts? People, shows, movies, etc.

C:When I started I always thought Martial Arts were really cool. There was a show called Kung Fu that I was really interested in. [I have a] love of the sport, it's really fun, [and] it's great exercise. It's valuable and a good stress-relief exercise.

What is your preferred style of fighting, etc?

C:Some [styles] include Olympic Styles from the ITF, WT, and IOC Foundations, but I don't do [those.] I come from a pretty traditional Taekwondo background. [Then,] my school went more into a mixed Martial Arts direction incorporating grapples and things like that.

Describe the latest tournament you attended.

C:It's a local tournament, [the] Captain Tamara Memorial Tournament. It's a fundraiser for a college scholarship. It's pretty big, maybe 200-250 competitors; there was a large number of youth competitors. It was a single elimination bracket tournament and an open Martial arts tournament, so there were many styles there, on a point based system. There was a Forms Tournament as well. [Also,] on a more interesting note, Karate is going to be a part of the Olympics next year.

How would you describe your own performance in the event?

C:I won my bracket in H-Division, young adults, in my lightweight division. And then I won the grand champion competition between the various other bracket winners. The level of competition wasn't all that high, a couple of the really great competitors were missing. But there were some good matches.

As for the Martial Arts club itself, do you know how old it is, and who runs it?

C:Uh, well, I've been in it for 3 years, but that's all I know. Clubs are weird

because you have that group of students moving in and out as they graduate. Our President is Daniel Aranda, and I am the VP. We have a bunch of different sub-clubs: BJJ, (Brazilian Jiu-Jitsu) Capoeira, Kick-Boxing, and Taekwondo. We maybe have like 25 people active. BJJ and Capoeira are doing really well. I'm mostly involved in Taekwondo because of my background.

When and where do these clubs meet, and what do members do there?

C:Kick-Boxing meets on Tuesday at 6:30, BJJ on Tuesday Friday from 8:30 to 10, and Sundays 12 to 2, Taekwondo meets Wednesdays at 5 to 6:30, and Sunday 2 to 3:30, and Capoeira is Thursday 7:30 to 8:30. They all meet in Room 1 at the gym. Members will be taught basic techniques and stuff if they are new, but you will be able to practice and train up to your level. The leaders for all the clubs are very good at teaching basics, etc. We are missing a lot of leadership that I wish we had, however.

Does the club hold events or go to events?

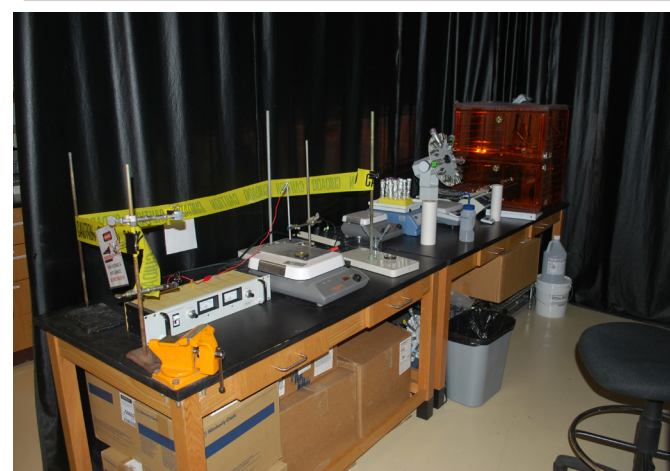
C:We don't really, but we go to tournaments with those with experience, the ones starting off are a little more hesitant to go to the tournaments. We did ok in both tournaments we went to [recently.] I did poorly at BJJ, but the rest of the team did pretty good. Lotta fun.

Anything else?

C:Being able to do a test and then hit something, it feels good!

-Skyler Matteson

Bio-analytics and Microfluidics in Chemistry's Piyasena Lab



The Chemistry Department's Piyasena lab works at the intersection of analytical chemistry, biology, and engineering. Their current projects aim to improve disease diagnostics using a new biomarker and to explore and develop the capabilities of microfluidic technologies.

The lab is headed by Dr. Menake Piyasena, PhD, a chemistry professor originally from Sri Lanka. In keeping with his analytical expertise, he teaches Quantitative Analysis and Advanced Instrumentation, as well as General Chemistry. The students in the lab include graduate students Shahriare Hossain and Nelum Perera, and undergraduates Kalika Pai and Brandon Phelps. To learn more, I spoke to Hossain and Pai about their bio-analytical work.

Phospholipase A and phospholipase D are two biomarkers present in the blood and urine whose levels increase with certain diseases, such as cancer. They have not yet been heavily investigated, explained Pai, but provide a promising avenue for faster disease diagnosis. Developing a method to accurately measure their levels is the goal of Pai and Hossain's work. The

enzymatic nature of the biomarkers can be used to achieve this.

Both enzymes break down lipids, or fats, as indicated by the "-lipase" in their names. So, if they are given a lipid substrate that changes when broken down, the amount of enzyme can be measured.

One option is to tag the lipids so that they fluoresce when broken down. The other is to make a lipid container, or vesicle, with a dye in the middle which leaks out when the lipids are broken down. So far, work has focused mainly on the fluorescence option. To measure the fluorescence they use flow cytometry, which allows the analysis of up to 50,000 particles per second.

The microfluidics research being done in the lab has relevance to this work as well, explained Pai. Microfluidics involves microliter volumes of liquids being passed along a channel. Particles within the liquid may be separated based on their size and density using sound waves. This allows the separation of diseased and healthy cells, or the concentration of lipid vesicles. The particles then may be analyzed with flow cytometry or another method.

Of course, research is rarely straightforward. When I asked Hossain about his experience, he explained: "There was a time I never thought about doing a PhD in my life. But with time I became very passionate about my research. Sometimes you can

feel frustrated or lost, but don't give up hope. Just stick to your plan." His advised anyone doing research to "try to explore," not just blindly follow the protocol. His favorite part of the work? Problem solving and troubleshooting.

For Pai, the best part of research is using knowledge gained in classes and gaining more knowledge as you go. It gives meaning to what you are learning, she explained. She also had some valuable suggestions for undergraduates who want to get involved with research. "I think the biggest thing is that younger students just shouldn't be afraid of talking to their professors," she said. "They're people, with normal lives, just like you." Pai started her work by talking to Dr. Piyasena, her advisor, and now has been doing research in the Piyasena Lab for about two years. She has also done research with polymers at NMSU, which she felt was a valuable experience that allowed her to see how research is done by other groups. She will graduate in May with a BS in chemistry and is currently applying to chemistry PhD programs for after that.

For more information about the Piyasena Lab, visit their website: <https://sites.google.com/nmt.edu/menake>

-Evelyn Byrd

Science and Research

"I have no special talent. I am only passionately curious." - Albert Einstein

KTEK Radio: Past, Present, and Future

At the various SGA Senate Meetings I have attended, I often heard the SATD, Casey Aumack, mention the returning of KTEK radio. Unfamiliar with the topic, I interviewed Casey in hopes of learning more about why it was shut down, what it used to play and how popular it was, what it is playing now, and what its future looks like.

How about giving us a little about yourself; How'd you wind up at Tech?

C:I am from Los Alamos, majoring in Mechanical Engineering, and I am 24 years old. I went to Tech cause it was the first place I applied for and they accepted me the next week. I had planned to go to UNM because my dad and my sister went there, but I saw their Mechanical Engineering department and I wasn't very impressed. This school is a lot more school focused and small; I never was really much for being a social butterfly.

What's your history of involvement with the SGA and the SAC offices?

C:At the beginning I worked at the library, but I heard that the SATD position was up for grabs, and I was trying to take it, but the Resident DJ position was open, so I thought: 'I know enough about music,' so I applied for it. I was first shot down due to the [newly elected] SATD not really giving me the 'time of day' and [it seemed] she already had someone picked out.

C:The next SATD, I felt, was taking both mine and his position more seriously. (Casey was able to get the DJ position) However, the other SATD merged both KTEK and the SATD, so I credit her with that. As DJ I learned

the ins and outs of the auditorium, technical stuff; Since the radio wasn't up I did interviews with professors to have content when it was up. It was in my 4th year that I got the SATD position.

Can you give me a history of KTEK and its dissolution?

C:KTEK started in the 70s or 80s, and was a prominent part of Tech, that had more of a budget and presence. They had FM radio, bunch of music, a radio technician, and up to \$18,000 just in their budget, based on what I know. It went up until the late 90s early 2000s due to mismanagement and questionable decisions. They were cursing on air, even though the 6am to 10pm slot is supposed to be clean, playing explicit music, playing sex-on-air; literally fucking on air. We now have a new precedent in our code of conduct saying 'no fornication.'

C:No one really cared about these things, until they decided they needed to reach more people. They added a linear amplifier on top of the one that was already [there,] bleeding out into everywhere. It might have bled into air coms at the airport or maybe even White Sands Missile Range. The FBI confiscated all the broadcasting equipment and the FM license, which costs anywhere from \$5000 to \$8000 to renew. It pretty much went to the wayside after that.

What kinds of updates to KTEK have been going on recently?

C:When Kira [the SATD before Casey's former SATD] came in, the KTEK office was all that was there, and it was a tiny ass room. She cleared out

all the rooms and made it into a studio space, primarily for recording. She got the ball rolling. When Dylan came in, he pushed for defining the prospect of KTEK. He asked us about music licenses, what kind of radio we could actually do, and the feasibility of doing a stream. Even a low power FM can cost anywhere from \$1200 to \$3000. We did find 'Part 15,' which hosts your radio for free as long as it [is] educational, non-profit, etc. However, it can only be done on the campus and its on AM frequency, so even less people listen to it. So we were trying to get a webstream up to get more with the times.

What does the future of KTEK look like?

C:What I hope to do is successfully run the stream, prove that we can do it responsibly, and then maybe get the FM radio. I want this to be a student run and student promoting collaboration event. By students, for students. We can play radio and music, but we'll just be like any other college radio. I want to host student singers and DJs on to show guys stuff, we were even thinking about dnd podcasts. The only consistent thing right now is Bob Ross, 8-9. Eventually we will structure it more, but we will play whatever the students want to hear. Maybe students could share their passion in anonymity.

Any last words for Tech?

C:If anyone wants to be a DJ or something, shoot me an email at nmt.sga.satd@gmail.com

-Skyler Matteson



NMT Sports Highlights: 11/25/19

Credit to Gearoid Dunbar for providing sports club news. More information regarding Martial Arts Club lies within this issue.

Mens' Rugby (Shown at Bottom):

AWAY: Versus Colorado College on November 2nd: Won 55-12

AWAY: Versus Colorado School of Mines on November 9th: Lost 29-12

HOME: Versus Colorado School of Mines on November 16th: Won (No score given)

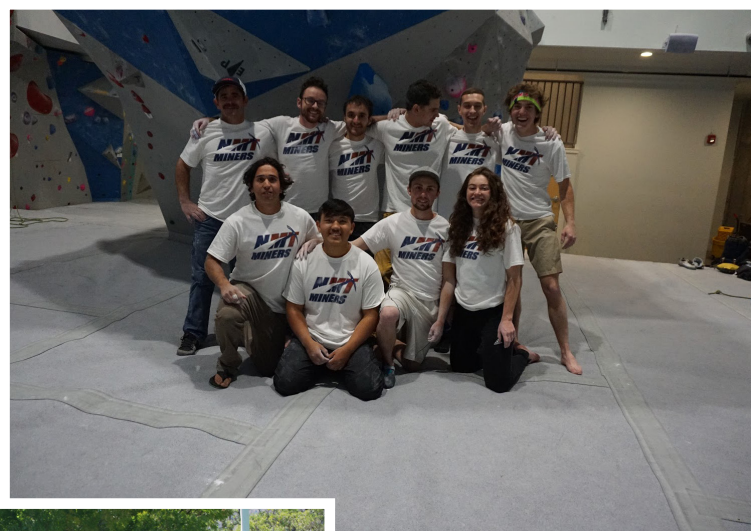
Tennis Club Event (Shown Directly Below):

On Saturday the 16th, the NMT Tennis Club had its first 'Tennis Day for Kids' at the Socorro City tennis courts. 13 local kids and kids of staff attended the free event, and for some, were introduced to Tennis for the first time. Due to positive response [from both] parents and kids, the club is looking to host the event again next semester.



NMT Climbing Team (Shown Directly Below):

The New Mexico Tech Climbing Team Traveled to Eagle, CO for a USAC sanctioned climbing competition on the 16th of November. Four of the nine attending team members placed in the Top Ten of their respective categories. Parker Newcomer and Sara Watson led the team both placing 5th in the men's and women's categories respectively. The other schools that attended were Regis University and the United States Air Force Academy, [and they] were well-versed with the new-age indoor climbing style: contorted sequences with large plastic holds. This style of climbing was unfamiliar to the outdoor Socorro climbers; however, they overcame the pressure of an unfamiliar climbing style by working together. This first competition enlightened the team to gaps in their training and facilities, such as [their small] climbing gym. Team members and coach, Scott Roberts, fought hard to achieve a remarkable result overall.



Young Frankenstein Brings Community to Life



The production of Young Frankenstein this past week was a great success. The show had it all: humor, catchy tunes, and fellow Socorro residents suddenly on stage exhibiting talents you never knew existed. Of all the Macey shows this semester, Frankenstein had some of the biggest crowds, and brought the campus and town communities together.

Put on by the NMT Communication, Liberal Arts, and Social Sciences (CLASS) department, Frankenstein drew on the talents of Techies, Socorro Community Theater members, and other Socorro residents alike. The range of ages, backgrounds, and experiences was staggering; including Tech freshmen, retirees, and many in between, the diversity of the cast was one particularly notable part of the show. No matter their role, it was apparent that each actor was having a great time as they sang and danced their way through such hits as

“Transylvania Mania” and “Puttin’ on the Ritz.” The live music, courtesy a talented stage band, was also excellent. Truly, it was great fun to see people from such different contexts step out onto the stage.

As explained at the start, Frankenstein was full of body humor, and not just by the monster. Not suitable for children but perfect for stressed-out college students, it was an engaging surprise for those of us who only knew the original Frankenstein novel. However, its content makes perfect sense given that the play is based on the 1974 film by Mel Brooks, who also brought us classics such as Robin Hood: Men in Tights, Spaceballs, and Blazing Saddles. The recurring gags were well done, clever adaptations using the space and resources available in Macey. All together, the show kept us laughing from Scene 1.

The science theme of Frankenstein also

struck a chord with our community. Aside from raising questions about just what exactly the Tech anatomy and physiology class is doing this semester, it showed the collaboration between science and show business in a more concrete way. In the show Igor is tasked with fetching a brain for the monster, which he does, with some success. Although we have a reputation for being smart at Tech, we do not usually have too many brains just lying around (although again, consider the anatomy class). So the brain used in the show was loaned by Dr. Tartis in the Chemical Engineering department, who uses such synthetic brains for concussion relevant research in her lab. From her experiments to another, more shocking one, we can admire the collaborative spirit of research, and the generous spirit of the Socorro community.

All in all, Young Frankenstein was a funny, popular show that attracted and engaged a wide audience here in Socorro. It continues the tradition of excellent shows at Macey Center. The last two shows for the semester will be holiday themed: A Christmas Carol and Mariachi Christmas. If previous experience holds, these will also be well worth going to.

-Evelyn Byrd