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**SGA Meeting Rundown: 2/4/20**

1. The Dean of Students introduced the idea of bringing a Recyclemania event to campus. This would include cans, paper, etc, but no glass due to a lack of resources in town. The forming of a Committee on Sustainability was also discussed.
2. The SGA President presented a document comparing points of the NMTSGA Constitution to that of UNM, NMSU, and the University of Houston for the Senate's review.
3. The PR Committee has been the first SGA group to pass their Standard Operating Procedures, laying groundwork for their procedures and providing a template for other SGA Standard Operating Procedures.
4. It was informed to the Senate that the Opportunity Scholarship money, at the state level, was looped into the Lottery Scholarship as a one-time occurrence. This Bill, known as House Bill 2, has been passed by NM's Legislative Finance Committee and is, as of the time of the meeting, to be voted on by the full house.
5. Despite this, the NMT Senate voted to send in the results of the school-wide poll regarding student concerns on the Opportunity Scholarship to the Governor, President Wells, and others, anyways. These were presented in an amended bill in support of the Scholarship, provided student concerns were addressed.

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**READ BELOW TO WIN!**

Interested in photography? Like to win prizes? Submit a potential cover photo to Paydirt at paydirtnmt@gmail.com. The best photographer will win a Cards Against NMT deck, and their submission will be used as either the back cover or front cover photo for our next issue!

Photos cannot contain explicit, hateful, or otherwise inappropriate imagery.

Notice: Cards Against Humanity and by extension Cards Against NMT are satirical games and do not mean to defame any person, place, or entity in the card deck.
Relax and Unwind
“The main thing to do is relax and let your talent do the work.” - Charles Barkley

Meet The Staff

Skyler Matteson: Editor in Chief
Evelyn Byrd: Journalist
Samuel Baca: Photographer
Jaime Mendoza: Layout Editor
Katelyn Green: Journalist
Dog: Hot Dog (not actually ours, but we wish he was)

Across
2. Get over here!
4. This game is based off of popular
comics.
5. This game series boasts several
crossovers to other non-fighting game
franchises.
8. A rare title to see today.
9. This franchise introduced combos.
16. The main character is a ‘badguy.’

Down
1. This game has a 1940’s aesthetic.
3. This franchise has a manga
adaptation.
6. This title was not originally
considered as a fighting game.
7. This title has over $1000 in D.L.C.
No, it’s not by EA.
Sports and Athletics

"I have just fallen back in love with rugby league again." - Sonny Bill Williams

NMT Sports Highlights

Men's Rugby
Game Schedule:
February 22nd vs. NMSU (Away)
March 7th Texas 7's Tournament (Away)
March 14th 15's match vs University of Denver (Away)
The NMT's Men's Team tied the Albuquerque Aardvarks 35-35 on Feb 1st.

Women's Rugby
Game Schedule:
February 15th vs. NMSU (Away)
February 22nd vs. UNM (Home)
March 7th vs NMSU (Home)
March 28th Zia 7's Tournament (Away)
April 4th vs. NMSU (Away)
April 18th Spring Fling Tournament (Home)

Hiking Trips
Saturday 2/1: Bosque Del Apache East Road
Sunday 3/1: Bursum Springs in the Quebradas
Saturday 3/28: Socorro Valley Bosque Trail
Saturday 4/25: EMRTC Canyon

Registration for the hikes is REQUIRED and is to be submitted to Melissa's email by noon on the Friday before the hike. For more information or to sign up email Melissa at: melissa.begay@nmt.edu.

Martial Arts Club
Training Times:
Capoeira: Tuesdays and Thursdays 6:30-8:00pm Room 1.
Tae-Kwon-Do: Mondays 6:30-7:30pm Racquetball Courts,
Wednesdays 5:00-6:30pm Room 1 and
Sundays 2:00-3:00pm West Gym.
Brazilian Jiu-Jitsu Tuesdays 8:30-10:00pm Room 1,
Thursdays 6:00-7:30pm Racquetball Courts and
Sundays 12:00-2:00pm West Gym.

E-Gaming
February 8th: Rocket League vs UT Arlington - 1Pm MST
February 15th: Rocket League vs UT Dallas - 1Pm MST
February 16th: Rocket League vs OU Crimson - 1Pm MST

Que Suave Cafe

Just off of Bullock next to Yo Mama's Grill, there is a new place for students to meet their coffee needs- and maybe even do some studying too.

The Que Suave Cafe is a locally-owned and operated coffee shop. Its newly renovated interior is clean and bright, with floor-to-ceiling windows that help give it a cheerful atmosphere. Relaxing upbeat indie music plays from a screen in the corner, mingling with the quiet conversations of the customers. Just left as you walk in, a "Local Legends" board full of El Defensor Chieftain clippings pays tribute to people doing all kinds of good work around town. In all, it provides a positive and hopeful environment that is a welcome change from the stresses of everyday life.

Que Suave joins M Mountain Coffee, and arguably Fire and Ice, as cafe options here in town. Its coffee has been deemed good, and it has tea options as well as pastries and snacks. Within walking or biking distance of campus, it promises to be a solid hangout for students as well as community members; in fact, at publication time a Smash tournament is planned there for Friday. And students have already been seen there doing work too.

Que Suave is open from 6am to 6pm every day of the week. If you are looking for a good drink, to support a local business, or just to get off campus for a while, go check it out.

- Evelyn Byrd
Elizabeth Roberts—Victorian Kickboxing

Elizabeth Roberts, also known as Lizzy, is a freshman here at New Mexico Tech studying Biomedical Science. Lizzy started boxing only about a year ago in Moriarity New Mexico where she is originally from. Last August she opened up her own gym here in Socorro called Victoria Kickboxing. She teaches classes and trains for her personal fighting career all while managing the gym herself. She said, “I know a year doesn’t sound like a lot of time, but I was in the gym prior to boxing 7 days a week 2 hours a day for about 7 months. I put in a lot of hours to get to where I am physically today.”

Lizzy’s original plan was to come to Socorro and continue training, but when she found out that there was no gym in Socorro to train, she created her own. She teaches several different classes. These include kids classes Mon-Wed-Fri from 6-7pm ages 6-12 years old at $100 a month, teen and young adult’s classes Mon & Fri from 7-8pm at $65 per month, and women’s cardio Sat at 9am and Wed from 7-8pm at $45 for once a week and $65 for twice a week. She said, “Tech students only have to pay $50 for the teen and young adults class and everyone’s first class is free if you want to come try it out.” Her gym is located at: 213-215 Fisher, Socorro NM 87801 inside the Rising Stars Dance Studio.

When Lizzy was asked what she loves most about boxing, she said, “Boxing is such a fun way to stay in shape and I personally fight, so I enjoy training myself to fight other opponents. There is such a huge adrenaline rush and I just love the feeling you get when you step into the ring to fight!” Kickboxing isn’t just about fighting for competition, Lizzy said, “Some people don’t like to fight and that’s okay, to kickbox you don’t ever have to fight anyone if you don’t want to. You can always just come for the workout.”

Lizzy has big future plans when it comes to her personal boxing career. She is going to stay local right now and has a fight coming up later in February. She hopes to end up competing in the State Golden Gloves Tournament and then Regionals. If she wins in either of these tournaments she hopes to go to Nationals. If she continues to win, she wants to fight internationally at some point in her career. She also mentioned she wanted to try out for the Olympic Boxing Team in the future.

Lizzy really wants people to come out and try kickboxing. According to her, “It’s a great way to meet new people, a great stress reliever, and a workout that’s fun and keeps you in shape. She hopes to see more people come try it out and wants this information to let the community and our readers, Tech students, know that it’s available.

For more information about taking some classes contact Lizzy at: elizabeth@victoriakickboxing.com or 575-224-2156.
**Student Spotlight**
"I'm not really a quote guy." - John Racette

**John Racette**

*How long have you been doing Parkour?*
J: Since I was a sophomore in high school, Four years?

*What's the hardest trick that you can do?*
J: Side in Full out, you do a side flip and then a full twist after.

*What's the difference between Freerunning and Parkour?*
J: There's a difference between Parkour and Free running. Free running can involve flips while parkour's objective is to get from point a to point b as quickly as possible. Free running is an adaptation of parkour that is more focused on style rather than efficiency.

*Which do you prefer to do?*
J: I always prefer to do FR but it's a nice change of pace to do parkour.

*What got you into parkour?*
J: I got involved in American Ninja Warrior training and slowly fell out of love with that. My friend and I then began to train in the streets.

*How do you train the streets?*
J: Since College I have been training once a week on Sundays in Abq and occasionally in Socorro. Early in the morning I will go scouting for spots to do tricks and jumps. I also hit the gym before my morning classes.

*How don't you get distracted by your mob of fans?*
J: I use my parkour skills to keep a good distance from them.

*Do you have a girlfriend?*
J: I do

*So how do all of your fans take that?*
J: That I have a girlfriend? Well, I'm sure they understand.

*Have you ever gotten any injuries from parkour?*
J: I've had a few major injuries but never from parkour.

*Has Parkour helped you in other parts of life?*
J: The mindset I have developed in Parkour has helped me get over fears more easily in other facets of life.

*What's your favorite quote or motto?*
J: I'm not really a quote guy.

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**Caving Club**

The NMT Caving Club is promising increased activity this spring. A longstanding club which has seen reduced activity in recent semesters, it has new leadership that is motivated to share the unique activity of caving with beginners and veterans alike.

The club was founded more than two decades ago, and for many years the primary leader was David Hunter. His departure from Socorro after his graduation in 2018 took with it more than a friendly face and a plethora of wolf-patterned T-shirts; it also took a wealth of local cave knowledge and contacts that other students struggled to function without.

However, this void is now being filled by some other individuals. Noah Hobbs, the new club President, has experience with cave rescue work. Other officers include Tyler Mobraten, Eshani Hettiarachchi, and Connor Whitman.

Dr. Daniel Jones, Ph.D., is the faculty advisor. Dr. Jones is an Assistant Professor of Geobiology in the Department of Earth and Environmental Science, as well as the Academic Director of the National Cave and Karst Research Institute (NCKRI). His research is focused on “microbial sulfur cycling and microbe-mineral interactions in cave systems,” and has included fieldwork in caves in Italy.

Club meetings will be the second Tuesday of the month at 6:30pm, location TBA. The first trip of the semester is scheduled for the weekend of March 7-8 to the lava tubes of El Malpais National Monument.

You can request to be added to the email list at https://lists.dragonsdawn.org/listinfo/nmt_caving, and further information and trip reports are available at https://www.dragonsdawn.org/nmtCaver/index.html.

- Evelyn Byrd
Mechanical Properties of Bicrystals

Paydirt has showcased its fair share of campus research within its pages, but as I was brainstorming articles for this issue, I was having a hard time remembering the last time Materials Engineering was centerstage for such a piece. As such, I decided to interview Audrey Campbell, a graduate research student in the department studying the mechanical properties of bicrystals under Dr. Choudhuri.

When and why did you choose this research? How did you get in touch with Dr. Choudhuri?
A: I started August of last semester. Why I started relates to how I met Dr. Choudhuri. This is my 3rd semester as a grad student, but when I started, none of the professors had an open graduate position. At the beginning of last semester, I asked Dr. Burleigh [the head of the Materials Department] to switch to the new Masters of Engineering degree, but he said to talk to Dr. Choudhuri first. [Dr. Choudhuri] told me about his research, and it is similar to what Dr. Hargather does. I enjoyed her classes, so I figured I'd enjoy working for Dr. Choudhuri.

Briefly describe what you are researching.
A: My thesis is on FCC and B2 bicrystals. I am looking at two different orientation relationships to see how they affect mechanical properties. These include strain rate on deformation, temperature, fracture strength, adhesive strength, and dislocation motion across the interface: where the two structures meet.

Will you be publishing a paper? What is the end goal of your research?
A: The overall end goal is to get a Master's Degree. But in the meantime, it's to publish papers. I actually recently published a paper with Dr. Choudhuri. At most I plan to publish 3 papers, most likely 2. Most of my research is on laying groundwork. As you get smaller and smaller [sample sizes] of bicrystals, forces can change. At some point you don't have a big enough sample to get accurate results. Too much takes too long to run an experiment and costs too much. The main part of my research is taking the same set of experiments and replicating them with larger and larger sample sizes to achieve a stable set of results.

What is the best and worst parts of your research?
A: Anytime I get something to run. I am NOT a programmer. The worst part is the weeks it takes me to get to the best part.

How has the Jones construction affected you?
A: It hasn't really affected my research, but it does affect my ability to teach labs. The move didn't really finish until the end of the end of the first week of the semester, so it can be really hard to find equipment.

- Skyler Matteson
Science and Research
"I grew up thinking that a research scientist was a natural thing to be." - Stephen Hawking

Natural Product Chemistry

Timothy Chavez, also known as Tim, or as a lot of people like to call him, Timmy Jimmy, is a senior here at Tech majoring in Chemistry. When Tim first arrived at Tech he was a Petroleum Engineering major, but once he took a few Chemistry classes he realized that he loved Chemistry a lot more than Petroleum Engineering. The professors in the Chemistry Department convinced him to switch majors and he hasn’t looked back since.

He will take a natural substance found in the wild either from fungal bacteria or plants that exhibit some type of biological activity such as anti cancer or anything of interest. These biological activity’s that he looks at could benefit society and he looks at the molecular structures of these natural substances. Tim produces such natural products and can choose whichever natural product he wants. These structures can be very complex and pose problems. Tim said, “I view this situation kind of like a puzzle and try to piece it together starting from the big picture and seeing how to make the project affordable, quick, and efficient with the best plan possible to move forward in the research at hand.”

Tim has learned many things from doing research at Tech. He said, “I have learned about perseverance, character building, and to always keep going. When a reaction in chemistry doesn’t work, some people get upset because it failed, but this fuels me to keep going and rerun the reaction and figure out why it didn’t work.” Tim looks beyond himself when he does his research and realizes how important accurate results are. He said, “In my mind it’s more than just me working on this project, it could be a possible cure for cancer or another important treatment to a disease and that’s why I take my work very seriously.”

Tim is helping the scientific community and adding knowledge to the science community in other places besides Tech. Tim said, “I have learned a lot from conducting research. It has really narrowed my scope down to help me understand organic chemistry. Its one thing to take Organic Chemistry 1 and 2 and do things on paper, but when you get your hands in the lab you realize it’s not as simple as writing an arrow with a couple of reagents. I gained a lot of knowledge from hands on work while working in the lab.”

Tim’s future plans are to go to graduate school. He is still undecided of where he will be going right now, but is leaning towards going to the University of Arizona where he wants to further pursue his research in natural product chemistry and eventually obtain his PhD. Tim ended his interview with a smile and said, “If you hate chemistry don’t worry, it loves you back.”

-Katelyn Green

Autonomous Technology and the College Experience

It’s no secret that parking seems to be a pain point among college students on several campuses across the United States. According to the New York Times, the University of Wisconsin-Madison has one parking space to every five people, and approximately 65,000 students. The campus plans to add an additional 2,200 parking spaces over the next twenty to forty years, which seems like a long time for a campus and student body that is continuously growing. In fact, the application rate at the University of Wisconsin-Madison increased from 2017 to 2018 by 20%.

Transportation and parking remain an ongoing issue among campuses everywhere. A college student at Florida Atlantic University recently highlighted her frustrations with campus parking. “I was rushing to class for a Monday morning lecture that began at 8AM. At 7:59, I was nowhere near the building for my course because I had to park so far away. I awkwardly walked in at 8:17 and interrupted the professor’s lecture. On top of that, I needed to arrive early to put finishing touches on a paper that was due at the beginning of class. If I had access to better, more reliable modes of transportation, I would take it.”

Among the many public state universities, most are thousands of acres wide. The University of Florida, for example, is sprawled over 2,000 acres of land. With bus systems unable to service the demand and not enough parking space for students, students need an alternative transportation solution that is timely and efficient. Autonomous vehicles have become a de facto mode of transportation for the future. While we’re still in the early stages of the evolution of this technology, fixed-course autonomous shuttle vehicles could be a true transportation solution for college campuses. The use of controlled-speed timed shuttles that would allow students to travel between campus destinations will be revolutionary for universities that experience crowding or issues with parking.

Autonomous shuttles can be a more efficient and eco-friendly method of transportation for students as well as providing a more relaxing mobility environment. Rather than students parking their vehicles, and then traveling via foot to class, they can relax and work on schoolwork while the shuttle takes them to each destination. In fact, autonomous shuttle technology has already been introduced to several universities as a means of transportation. The University of Michigan and California State University have both recently incorporated autonomous shuttles (also known as “people-movers”) onto their campuses.

Furthermore, autonomous shuttles will be able to help students with physical disabilities where walking for what can sometimes be up to a mile to get from one class to another is difficult. While most universities have disability services available, very few of them include efficient, timely transportation. Providing an easier way to get around campus will greatly improve the overall college experience for disabled students and faculty.

Another benefit of autonomous shuttles is the safety. Autonomous Vehicle technologies are advancing and improving every day. Today, an AV does not see and interpret its surroundings exactly as a human would and therefore lacks a certain level of intuition. But, on the other hand, autonomous vehicles react to motion and events at a rate of two to three times faster than a human can and the use of artificial intelligence will continually improve the needed interpretive logic which will ultimately create a much safer transportation mode than human driven vehicles.

Most importantly, autonomous vehicles don’t get distracted by their surroundings or mobile devices like students and other drivers can. According to the 2016 Fatal Motor Vehicle Crashes report by NHTSA, human error and poor judgement are the leading causes of traffic accidents and deaths on our roadways. Federal and local governments, insurance companies, the medical community, and other groups are pushing for the introduction of autonomous vehicles to reduce this alarming statistic. There is plenty of research to validate that autonomous vehicles and equipment will dramatically improve safety in all applications, making campuses safer when autonomous transportation is deployed.

In conclusion, with parking continuing to be an increasingly difficult (and expensive) problem on college campuses, providing students with an alternate mode of transportation could solve many campus transportation issues while providing other benefits. Bringing autonomous shuttles to college campuses would greatly improve the overall safety and productivity of the students, teachers and staff and having innovative, eco-friendly and convenient options increases the attractiveness of campus life – an important consideration in the college selection process.

-Joe Moyer