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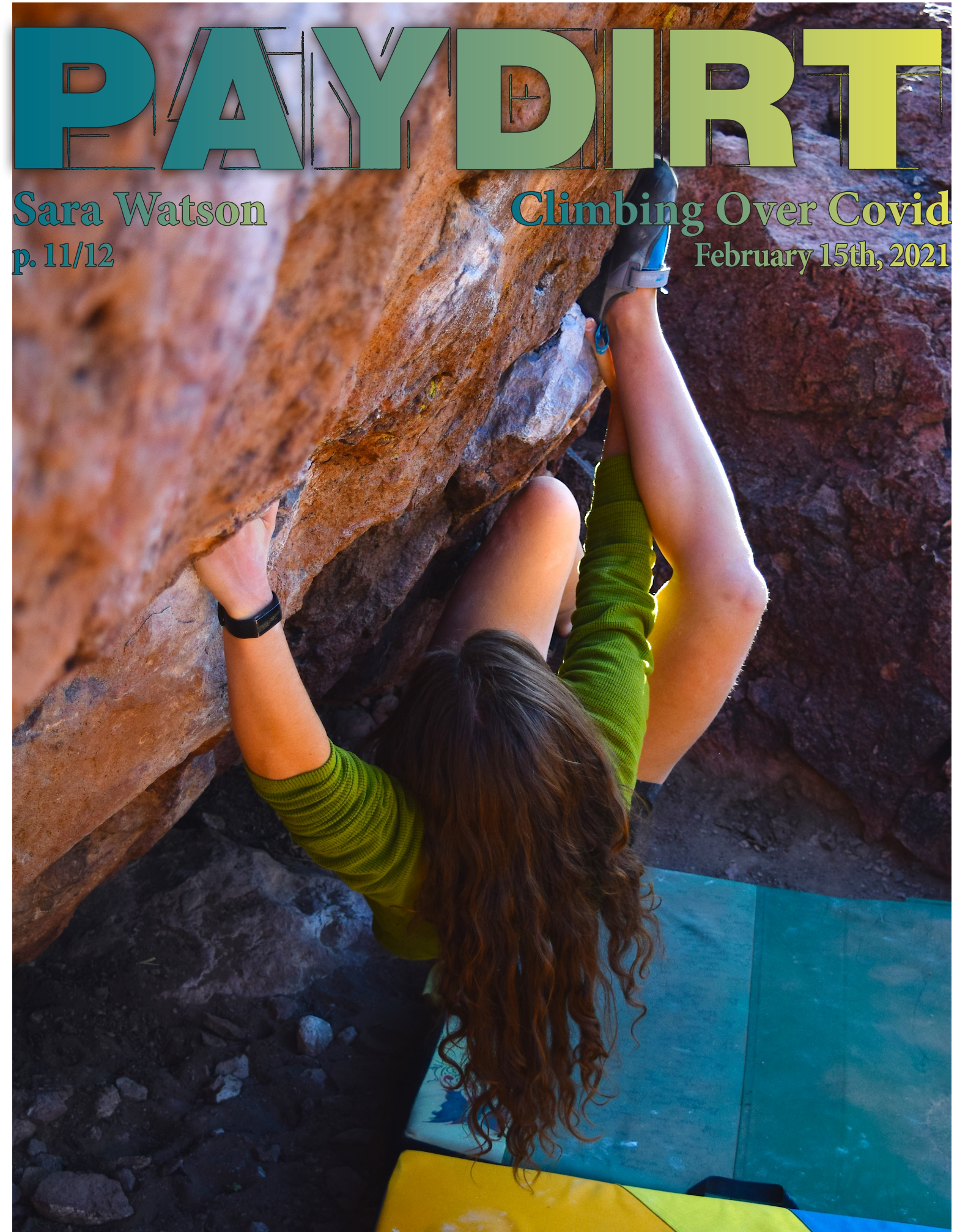
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PAYDIRT

Sara Watson
p. 11/12

Climbing Over Covid
February 15th, 2021



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Marina Hein

SGA Meeting Rundown: 02/09/21

1. **NOTE:** Please make sure to use best practices when reading and sharing Paydirt to minimize the spread of COVID. Please keep in mind that articles are written several days before publishing.
2. Information regarding the decision to increase the amount of time HCC lanyards are required was provided from Michael Voegerl. Paraphrasing, the lanyards are a way to provide a visual reminder and differentiate between students who have completed their HCC questionnaire, and those who haven't, regardless of testing date. In addition, it secondarily indicates your permission to enter NMT buildings to differentiate you from non-official business visitors.
3. Students are now on the COVID Task Force as of late last semester.
4. The Lottery Scholarship is proposed to be decreased by the Legislative Financial Committee in Santa Fe. There was a poll sent out to students a while back asking their input on this. Over 85% of students disagreed with this decision, and this is being used to convey NMT's student body opinion.
5. Jones is set to be completed by the summer.
6. A new SACD has been hired to take care of events for the student body, but the SGA is still looking for an AFO. contact sga.president@npe.nmt.edu or samuel.fischer@student.nmt.edu for more information.

Sudoku

		5		6				9
3	8						5	
	1			8				7
				5			4	
			2		3		1	
2			6					
	7			2			8	
	6					4		
			9			3		1

Embracing the Humanities to Survive the Covid Winter

The poet T.S. Elliot once wrote “humankind cannot bear very much reality.” However, as we have collectively noticed throughout the past year - reality is difficult to ignore and we must bear it. The question is how. How do we, as students, bear the sometimes crushing reality of ongoing social isolation, anxiety for our at-risk loved ones - or our loved ones lost to the virus, ever-changing restrictions, and the more regular demands of working towards your degree, showing up for work on time, and never missing job and grant opportunities?

A bachelor’s completed at an environmental liberal arts school will hardwire into the most resistant soul an appreciation for other disciplines - especially as alternate lenses to view the world and your own work through. So even though I am at NMT for a masters in biology, I’ve noticed NMT is missing that same focus on the valuable insights humanities studies can offer scientists.

NMT is a STEM-centered community through and through - and we are all very good at what we do. And as we move through this pandemic, STEM has been and will continue to be critical in managing, alleviating, and resolving the pandemic. STEM will help us understand the why, how, and solutions of the pandemic, but can offer few insights as to how one manages “too much reality” on a day to day basis as we all try to cope with the winter isolation of what’s been dubbed “the Covid Winter”.

The humanities can help us not only understand this moment in time but also provide escape from it and connection to others living through it. History can tell us what NMT students did to get through the Spanish Influenza pandemic of the previous century. The arts can provide comic relief for and escape from the world outside. Ethics and social sciences can help us successfully navigate balancing our needs as social creatures with the ethics of doing all we can to prevent virus transmission.

So I propose we embrace the humanities to move us through the Covid Winter . I suspect we are already doing it, whether you’ve jumped on Netflix’s Bridgerton craze, dusted off that guitar which previously was merely decorative, tuned in to one of NMT’s arts events, or read about what did and didn’t work during the era of the Spanish flu. Do not think doing any of the above makes you less of a true scientist for doing so.

To continue NMT’s tradition of producing valuable, groundbreaking STEM work, we cannot only be good scientists . We must nourish the part of ourselves that craves stories, music, and connection to the context of the moment we are in. We can do that by embracing the humanities.

- Marina Hein

Part 1 of the ‘Surviving the Covid Winter’ series

Creativity Submission Contest

Hello Paydirt reader,

Have you ever felt that this newspaper has been lacking in the creativity department? Have you ever thought that it needed something fresh? Well, here’s your chance!

We’d love to see your photos, short stories, poems, or anything else creativity related that we can put in our pages. You can request to be anonymous, or put your name out there. Your photo submission might even be showcased on the front page!

Here are the requirements: Your submission must not contain any hate speech, overly violent content, or anything else that would not be allowed per NMT’s general rules. If you have questions, feel free to email us. If the submission is in text, the word count must be less than 1300 words. This gives us space to include photos and format your submission the best we can.

We will always consider your submissions, but if you send them to us through the 8th of March, you might win a Cards Against NMT deck! The best submission will be decided by our team and the writer/photographer will be the winner. The issue with your content will come out, bar any problems, March 15.

We can’t wait to see what you come up with. As mentioned before, everything sent is subject to review, but for the most part feel free to embrace your creative side and come up with something special!

Campus Life

"Anytime you finish a climb, there's always the next thing you can try." - Alex Honnold

Climbing Through the Bias



Athletics and competitive sports have been male dominated and encouraged for men more than women for decades. It's no secret that women have, in history, been discouraged and shamed from being "too" athletic, facing ridicule and negative stereotypes for their attitudes and physical attributes that come from progressing in a sport. As time has passed, American culture has become more accepting of women pursuing competitive athletics. February 3rd is National Girls and Women in Sports day (NGWSD), a day to reflect, celebrate, and encourage women across America to engage in sports and to feel proud of their accomplishments.

Sara Watson, captain of the women's climbing team at NMT, is the perfect example of a woman that's teeming with strength and athletic accomplishments. Having been climbing for the past two and a half years, Sara has made strides in the climbing community here at NMT, always looking to inspire fellow women to start climbing and

push themselves in the sport. "I really want to encourage the women that might be intimidated by all the men in climbing...it's becoming more obvious that climbing is starting to move in a female direction." Sara sees the shift in the gender dynamics of the sport and how "women find more of their strengths in the technique of climbing," bringing a new perspective to the more strength reliant climbing style of some men in the sport.

Socorro and the BLM area known as "The Box Recreation Area" (or better referred to as 'Box Canyon' or simply "Box" by local climbers), is well known for the bouldering, sport and trad climbing. Sara began climbing in her underclassman years at NMT, getting involved with the climbing classes offered, friends who also climbed, and a love for the outdoors. This combination made for a quick love story between her and the sport. Despite her passion for climbing, there have still been some rocky patches within her career.

Of all of New Mexico Tech's various clubs, organizations, and teams, there are few with as specific or academically influential nature as the Bladesmithing Club. Led by their current president, Micheal Narum, the club is overseen by the Materials Department, who provides the scrap metals and tools necessary for bladesmithing.

As the name implies, the club is dedicated to presenting students with a place in which they can hone their metalworking skills, both literally and figuratively. While there are some guided portions to what the club does, such as the occasional lesson on metallurgy, tool maintenance, and even material science, the majority of their work is self-guided.

Students can come and go as they please during their weekly meetings and unless Narum or any of the other experienced senior members feel it is necessary, their work remains largely their own. Of course, if the project at hand requires the student to use more complex techniques, help is always on hand for those who are willing to learn.

As president, many of Narum's duties suggest a more secretarial nature in terms of his actual job. This is mostly limited to emailing out to the different departments about materials, budgets, and so on. For Narum, the club is one of his favorite aspects of Tech life; when he was first introduced to the club several years ago, bladesmithing quickly became a favorite hobby, to such an extent that he even purchased his own forge to use on his own time.

Narum often finds the work relaxing, taking his time with projects to create beautiful finishes, adding new knives to his collection quite often. As a mechanical engineer himself, Narum also finds the cross-academic applications of the club quite useful, alongside a number of other students; due to the Materials Department overseeing the club, as well as the practical application of simply learning the effects of physical force, heat, and cooling liquids upon a wide variety of metals and alloys, the club's members will often convert these extracurricular projects into homework assignments, allowing them more than one reason to spend time working on them.

Even for the students who aren't interested in the academic side of the club, there are typically plenty of opportunities in which they can prove their mettle (pun intended); the club often participates in bladesmithing competitions and, at least up until the pandemic hit, would take trips to other states in order to compete.

Thanks to COVID-19, however, the club has unfortunately been missing in action since March of 2020, due to the close-quarters work environment of the club. Fortunately, they were finally able to reopen the club as of February 14th, thanks to the recent decline in confirmed cases. Between that and the fact that the club is about to purchase its' very own forge (they had been using a since-graduated student's personal forge), the future is looking bright for the Bladesmithing Club. For any who are interested in attending meetings or gathering more information, please contact Micheal Narum at bladesmithing.club@npe.nmt.edu.



Relax and Unwind

"I like the Japanese knives, I like French knives. Whatever's sharp." - Wolfgang Puck

NMT Bladesmithing Club



2019 TMS Competition Knife



2018 TMS Competition Knife

"...In climbing, there's not quite a lot of women, so it's a bit isolating sometimes. Like, I'll be in the middle of a session sometimes and look around and realize I'm the only girl here. That's a little weird but I try not to feel too odd about it."

Instead of focusing on feeling ostracized, Sara looks to good support systems within the climbing community, trying to focus on the climb rather than gender differences.

Most women find that their climbing strengths lie in focusing more on perfection of technique and good beta. This can sometimes be in contrast to a lot of men's climbing style, which tends towards focusing on strength and muscling through routes.

"Men tend to pick up the sport faster, while most women have to really work to develop strength and technique. I had a much harder learning curve than some of my male climbing friends when first getting into climbing...It was really frustrating and even discouraging at times."

But, Sara found a way to bring in her more technique focused style into her climbing with route setting. Route setting is the design of climbing problems in an indoor setting (think the new bouldering room in the gym!). Sara likes to incorporate very movement based bouldering problems when she sets, looking to create problems that you can't just "muscle through." She's found that setting has even improved her climbing ability, really challenging her to move through problems slower and look for better flow of movement.

Women have faced years of discrimination in sports and athletics but women like Sara Watson are pushing forward and inspiring the women around her to excel and try new things, no matter how intimidating it may seem.

- Alexandra Sartori



Staff Spotlight: Dr. Peter Phaiah



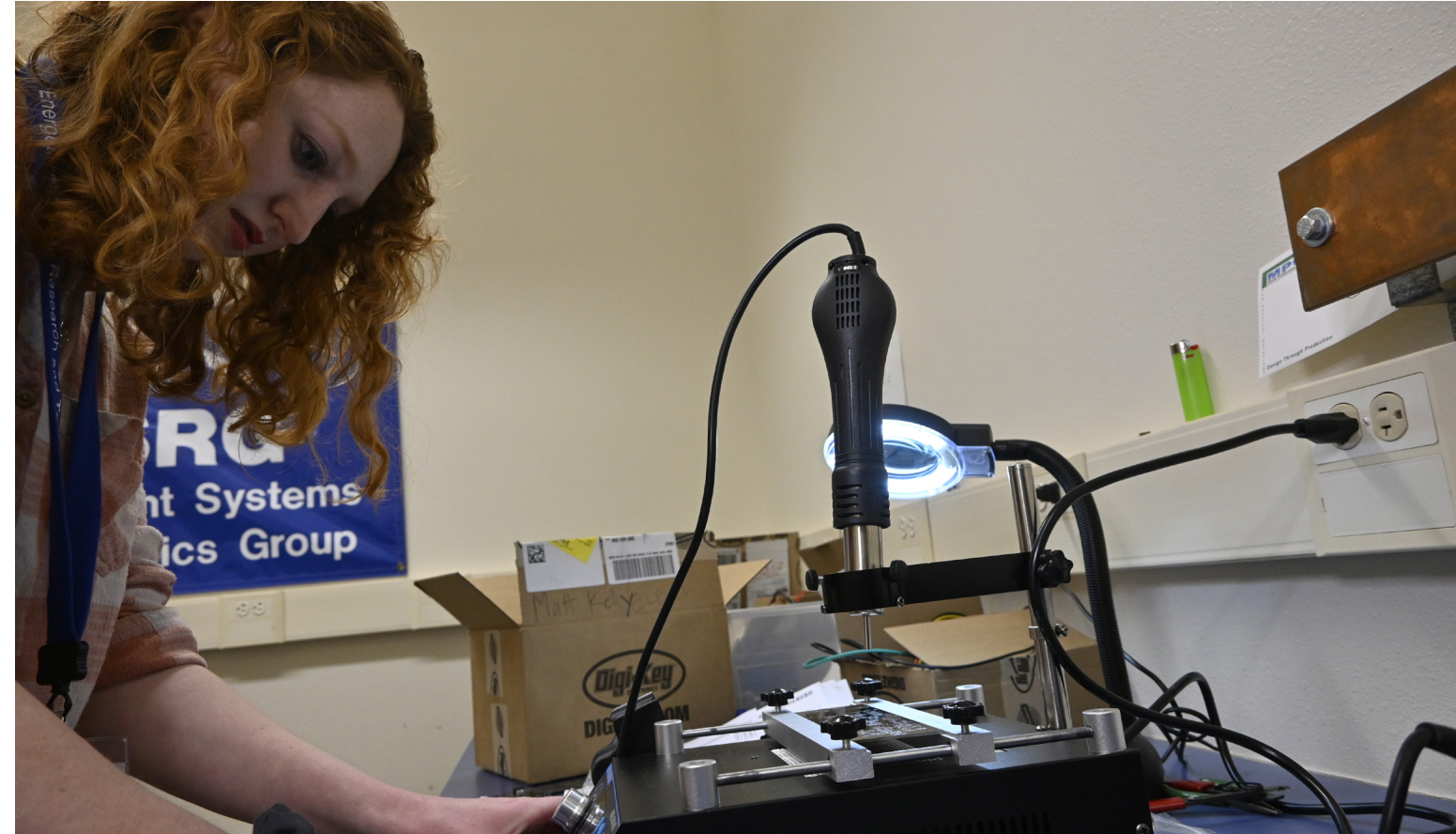
Many a Tech student recognizes the name of Dr. Peter Phaiah, who completed his third full year of working here last November. As the Dean of Students and the acting Vice President of Student Life, Phaiah frequently interacts with students on multiple non-academic levels.

But what many students are unaware of is what Phaiah did before his time here at Tech. Numerous as his accomplishments here have been, they are far overshadowed by his feats elsewhere.

When Peter Phaiah graduated and later earned his doctorate from Marietta College, Ohio, in

sports medicine, the first thing he did was look for opportunities to live life. That came in the form of the Alabama branch of the United States Sports Academy, which provided sports training to around sixty countries worldwide. It was through this academy that Phaiah was able to travel the world, no wife, no kids, no home, and no worries.

After spending two years traveling around twenty-three countries teaching people how to holistically care for themselves in every way and in turn, teach others the same skills, he returned to the United States to take up such positions as Dean of Students, Vice-Chancellor, and Title IX Coordinator at



you transmit wirelessly, you have broken the signal down to 0s and 1s, or some sine wave. The signal is sort of 'encrypted.' We're looking at different modulation schemes to transport with for better efficiency."

"I would say this communication is nice if you want a closed system that you want to communicate to. If you want a visual, it's just a little box, with our wireless communication research one day, Bobbi said this: "I would highly encourage checking in on that box. It's an isolated thing, and the applications are very broad. I don't want to pigeonhole this into one implementation."

I then asked about how Bobbi got into this research, and what she liked about it. She said that "just about every professor in the EE department has a research project. Dr. Lausery [was] doing communication, and that's what I wanted to do my thesis on. The project has been going on for [several] years, but I joined in October." As for how Dr. Lausery got this research going in the first place, Bobbi explained that Sandia usually comes up with an idea, and then looks for a university to pair up with, and Dr. Lausery fit the bill for what they were looking for.

"I do like my research! I think this is a COVID one: I like I can still do it in this setting. It doesn't require any extensive testing. I really like that we can all still work. All our stuff is in-lab; our schooling provides the knowledge and Sandia provides the materials."

In regards to undergraduates hoping to maybe take up a shot. You never know what might happen. Go out there and give it a shot."

If you have research of your own that you would like to talk about, contact me and paydirt@npe.nmt.edu, but until then, good luck pursuing opportunities!

- Skyler Matteson

Research Spotlight: Bobbi Taylor



As a newspaper, Paydirt likes to interview graduate students. They usually have some interesting research going on that we can relay back to students, have useful information for undergraduates, and as the SGA and therefore Paydirt cannot hire them, it gives us a chance to give them representation. Bobbi Taylor, one such graduate student here at NMT, accepted an interview with me last week so I could get a look at her Electrical Engineering research.

For a bit of background, Bobbi explained to me that she “did a tour [of NMT] in junior or senior year of HS, and I fell in love with it. It was just fun. My parents were worried, so I toured probably like 10 other college campuses, but I stayed in love with Tech.” As for how she ended up an EE, she said she “originally picked environmental first, and then got cocky and wanted something harder, so I picked EE and fell in love with it too. But I respect all degrees equally!” She stressed to me the importance of this last part.

We then moved onto her research. She stated that her research was funded through Sandia National Laboratories,

and as such a lot of “overarching ideas” were both closed off to her knowledge and barred from her being allowed to say, but in general she stated that her team was working on wireless communication. “Mechanical transconductance (MT) is what we’re going with. MT, near-field; were trying to communicate in a small setting, short-range. It’s a whole different playing field.”

“MT is the relationship between input and output. It takes a wireless signal, converts it to vibrations, and then back into a wireless signal. Let’s pretend you can’t see me or hear me. I convert a message to vibrations by ‘knocking on a door’ between us, and then you can understand by putting your hand on the door, and you can send a message back. Everything is vibrations.”

“Some examples of how we’ve done this is transmit/ receive 4k videos using piezo electrics. It’s the same as a microphone. It takes a vibration and converts it to a signal. We’re also looking at modulation schemes. Modulation schemes are combining other information with a wave, and then have the receiver understand the function. Whenever

several liberal arts universities, including the University of Minnesota (his longest-held position, about eleven years), North Carolina Wesleyan College, and Texas Wesleyan University.

After his time serving each of those universities, Phaiah found that the stress caused by the sheer amount of Title IX-related issues was incredibly high, so when New Mexico Tech presented itself as an opportunity, he took it.

Now, Dr. Peter Phaiah serves the Tech community on a daily basis in a multitude of ways; As our school’s Dean of Students, Title IX Coordinator, and acting Vice President of Student Life, he is, in essence, our principal. By day, he handles many of the non-academic issues students have, including but not limited to behavioral issues, financial situations, new club foundings, club cooperation, Residential Assistant and Peer Mentor support, and graduation planning.

As hectic as it may be, Phaiah says his favorite part

of the job is getting the opportunity to interact with and getting to know students around campus, giving him a chance to teach them self-sustaining life skills as well as a glimpse of what students think of New Mexico Tech; This, in turn, allows him to understand better what students like and what motivates them to do things, especially during these coronavirus-restricted times. As quarantine continues, Phaiah continues to do his best to ally himself with the students in order to open up as many opportunities for the student body as possible.

- Isaiah Padilla



Science and Research

"It is only when they go wrong that machines remind you how powerful they are." - Clive James

Physics Reworked



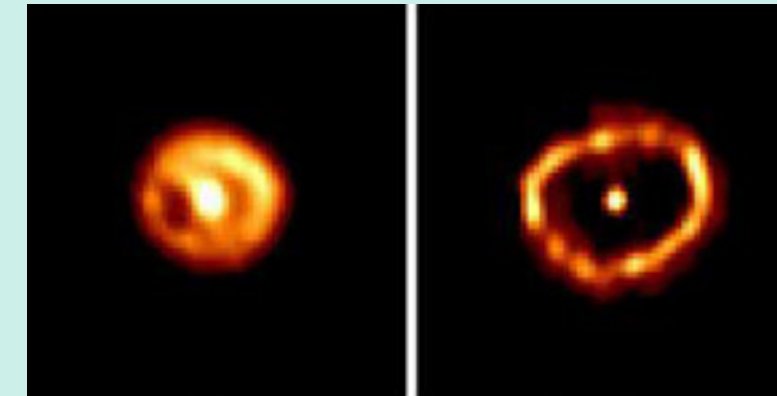
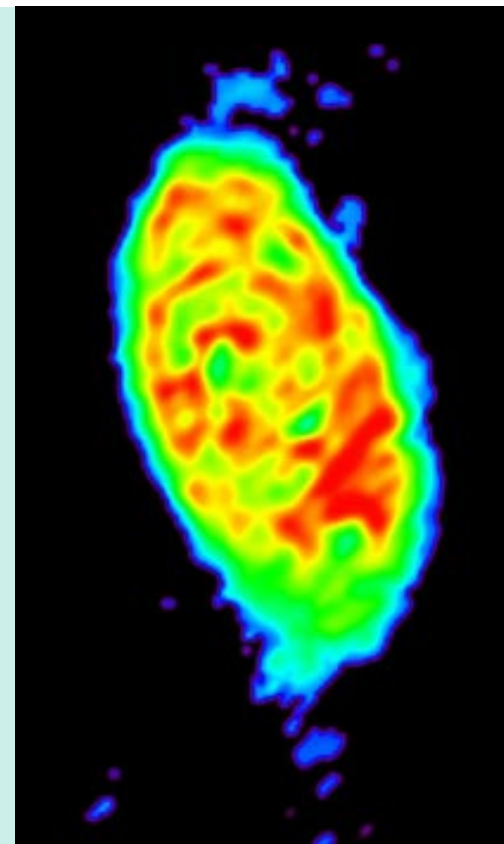
Physics is terrifying, there I said it. Between the math, the equations to memorize and then trying to figure out how to apply them, it's easy to just give up and Chegg away. But this approach does nothing for actual learning and comprehension. Sitting down and conceptualizing the processes and relating them to the long equations is hard and can take a lot of effort and time, it's easy to just assume that everyone else just "gets" physics right away and you're one of the few that can't. It may come as a surprise that there are physics majors and even graduate students that find physics just as confusing as you do.

Montana Williams, a physics department graduate student with her dissertation in Astrophysics and specialization in Radio Astronomy, knows the physics struggle by heart. Now on her second year of graduate school path, Montana is currently researching classical novae. Classical novae occur in binary (two star) systems. "Fun fact, most 'stars' in the sky are not single star systems, they are actually multiple star systems, with most being in pairs of two or three." Within this binary system, the classical novae is an event that takes place when one star within a binary system

gets "big and fat" while the other star has already died, becoming a white dwarf. Now, as this fatter star begins to accrue more and more mass, some of the mass will leech off onto the white dwarf. As this mass reaches the extremely hot white dwarf, the mass will explode off into a brilliant phenomenon, known as the classical nova.

While this classical nova would certainly be astounding to witness, Montana prefers to experience the event in a completely different manner, through the eyes of a radio astronomer. This may sound a tad confusing, how do you see a change in brightness in a non-optical manner?

"I like it because it is very confusing, it gives me the chance to try to really understand what we're observing because with optical you see an image but with radio astronomy, there's so much more that goes into trying to get a radio image...Like if I can't really see these [radio waves] with my eyes, what am I looking at?"



She implores the VLA and their radio telescopes and through this she works as a data calibrator monitoring these occurrences. Data calibration may easily be the most important part of the process. Montana works to correct for interference within the scientific process, ensuring that the final collected data is as accurate as possible.

Although passionate for her stellar research, Montana finds that teaching is really where her love lies. She's currently working as a TA for Physics I and Physics II recitations and yes, we all know the awful tendencies of recitations, long boring sessions that barely even help you understand what the professor was talking about earlier. Sometimes, sessions can go as far to confuse you more, but Montana actively works to kill this physics stereotype.

"...because when I look at all these complicated words, it sometimes doesn't make sense to me...so when I teach, I do that for myself but also so I can relate it to the students. I kind of distill what the professor is teaching and take out all the jargon, all the math, and try to just plainly tell them [what it all really means]."

Montana thinks that if physics was more accessible, then more people would naturally gravitate towards the field. Many people that come on as physics majors at NMT are later dissuaded from the field because they may not be "smart enough" for physics. Montana wants to be the change in the field that allows for people to feel confident in the subject, "I want to bridge the gap and I want people walking away from Physics I and II...appreciating the fact that physics really is the science of everyday life."

Between pursuing her research in classical novae and working to change the way we see and are taught physics, Montana stays busy. Look for your next physics recitation with her, and one day her own classes, to have the chance of seeing physics in a new light.

- Alexandra Sartori