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PAYDIRT

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Autumn Season
September 14th, 2020



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Special thanks to Dr. Mao and her dog, Oliver, for this issue's cover!

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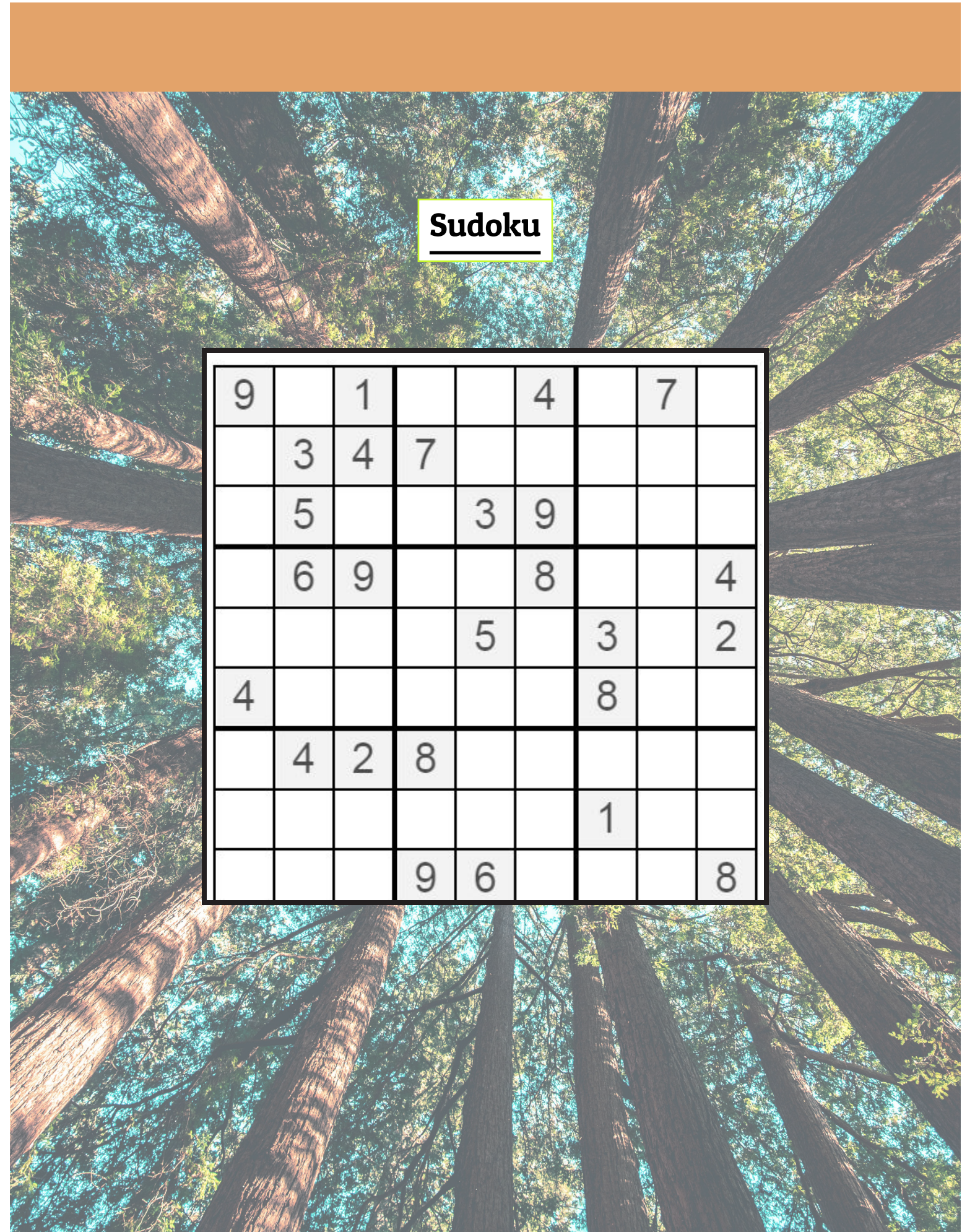
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Sudoku

9		1			4		7	
	3	4	7					
	5			3	9			
	6	9			8			4
				5		3		2
4						8		
	4	2	8					
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Relax and Unwind

"Be not simply good - be good for something." -Henry David Thoreau

Ladybugs!



SGA Meeting Rundown: 9/22/20

1. NOTE: With the outbreak currently on campus, please make sure to use best practices when reading and sharing Paydirt to minimize the spread of COVID.
2. There will be a debate watch on September 29th in Macey with a following discussion for students. Both a moderator and councilor will be present to encourage civil discourse.
3. Student Affairs is looking for a club to host an event for Hispanic Heritage Month.
4. Club videos will be up on the SGA website. The link is posted after 'Forms.'
5. This Wednesday through Friday is a Justice election for the SGA.
6. The next Board of Regents meeting is October 12 at 1:00pm in Macey.
7. Student Regent Applications are due September 30th.
8. Movies will be shown every other Friday on the Athletic Field. The first was last Friday.
9. There is an online complaints box underneath 'Forms' on the SGA website. If you have concerns or otherwise, you can send the SGA a complaint there, or come in person to the office.



Go. See. Do

"It does not matter how slowly you go as long as you do not stop." - Confucius

Buggin out in the Magdalenas



It's likely that the ladybugs of Socorro are climbing more mountains than you.

If you've hiked North or South Baldy of the Magdalenas during the Spring and Summer months, you probably know about the swarms of ladybugs at the summits. Swarms might even be an understatement. Thousands of ladybugs decide that, every year, these two peaks are going to be their new home for the Summer. But you don't really find them anywhere else within the Magdalena range, at least not in these quantities.

Ladybugs (Coccinellidae) aren't quite as lady-like as the name tends to lead on. These beetles are carnivorous, with their favorite meal being the meek Aphid (Aphidoidea). During the Winter to early Spring months, which ladybugs find to be the most apt time to mate, they actively seek out Aphids as sustenance. Female ladybugs actually require Aphids as part of their reproductive cycle, if they don't eat enough of the tiny bugs they will reabsorb their eggs without the chance of laying them. But as the number of Aphids begin to dwindle, ladybugs sometimes find themselves going higher in elevation to get more of their ideal snack.

Researchers haven't fully concluded why ladybugs congregate in such numbers at high elevations, but there are a few theories. The leading idea being that the

ladybugs are simply seeking more Aphids. Ladybugs hate the cold, or at least their bodies do, they cannot withstand temperatures below 12.7C° (55F°, for all you Imperial Unit heathens). So, as they head up in elevation to find more Aphids, they get stuck near the top as the temperatures decrease. Another theory is that, at these summits ladybugs are able to avoid more predators than at lower elevations. The terrain coloration and physical layout also brings up another theory, that ladybugs are congregating in these areas due to the surface giving off more heat. It's likely that all these theories play a role in why ladybugs migrate so high up.

Once the ladybugs summit these peaks, they go full on Dionysus with the gluttony. They gorge themselves on Aphids and pollen until they physically can't move and when they do move, it's for mating. This voracious cycle is known as diapause. Diapause is a nine-month period hibernation where ladybugs stop developing because they can no longer reliably sustain themselves in their environment.

The ladybug phenomenon happens every year and this year is no exception. Make sure to check out the ladybugs (who are NOT abiding by social-distancing rules) before they're gone again.

- Alexandra Sartori

Being able to view photography in such a scientific way, makes it easy to forget that it is still an art form.

"When you strip photography down to its basics, it's all about observation. Not about ISO, f-stop, white balance, or all the technical details that photographers need to know, but it is all about observing the world. Anyone can take a snapshot, photographers make art."

-Tony Perreault

Tony Perreault, NMT's Intro to Photography and Intro to Photoshop's instructor, takes an entirely different approach to photography than what might be expected at a STEM-focus school. Instead of spending time teaching all the tiny mechanics and rules of photography, he teaches the essence of photography; capturing a moment. As STEM

students, a lot of us have a tendency to like rigidity in our courses of study, a list of rules. Perreault challenges this by taking away the scientific and methodical approach to the art of photography, rather he asks students to worry more about just taking the picture. "...by the time, as a novice photographer, you've worked through what settings will be just right, you will have lost your shot" Even in Perreault's Intro to Photoshop class, he follows the same philosophy of almost neglecting the super-technical and scientific aspects to the art.

Look for classes with Perreault to help widen your knowledge of the scientific art of photography.

- Alexandra Sartori

Photos Taken by: Tony Perreault



The Dichotomy of Photography

Photography is easily one of the most mathematical and scientific artistries, relying on chemistry, physics, geometry and basic arithmetic.

Photography is a process, shooting and developing photos. In every step of this process, chemistry and physics are necessary facets, even including the physical construction of the cameras used. Before the era of digital cameras, film cameras were the only way to capture a moment, but the photos produced weren't as readily available as digital cameras. You had to take the photos to be developed by yourself or by a professional. This required sitting in a "darkroom" for hours, finetuning pictures with chemicals. From Daguerreotype to gum bichromate, each process required chemistry lab levels of precision and measurement. Daguerreotype was one of the earliest forms of film development. Silver-plated copper was exposed to halogen flames (iodine, chlorine or bromine), then exposed to sunlight that would cause a reaction that produced a latent

(you can't actually see it) image. This was then exposed to mercury fumes that developed a visible image, the plate then lost its light-sensitivity by the washing of the silver halide with Sodium Thiosulfate (Na₂S₂O₃). The printed image creates the iconic 1800's style of photography.

The lens of a camera is a finely tuned optics work of art. Cameras use convex pieces of glass or plastic to bend the light collected so that it converges to a single focal point within the camera. An equation was found where you could manually calculate the focal length needed for a specific distance:

$$\frac{1}{f} = \frac{1}{d_0} + \frac{1}{d_i}$$

where f = focal length,
 d_0 = object distance,
 d_i = image distance



Hitting the Snooze is Making you More Tired



Not everyone's a morning person, some days you really just need to hit the snooze button once...or maybe twice. Ok, maybe three times. College students are notoriously well known for sleep deprivation and Techies are no exception. We've all had long nights of cramming for an exam or trying to get an assignment in before the dreaded 11:59 deadline. All these late nights take a toll on the body, but hitting the snooze the morning after might not be as beneficial as you may think.

Your sleep cycle consists of four different stages that cycle approximately every 90 minutes. Stage one through three consists of NREM sleep (non-rapid eye movement sleep), this is from the time you first close your eyes to a very deep sleep. During NREM sleep, the body is very still and the eyes have little-to-no movement, waking someone during this time is fairly difficult. Then, the body moves into the final stage of the cycle, REM sleep (rapid eye movement sleep). REM sleep is where your dreams occur due to the higher activity in the brain.

Alarms, in general, aren't great for your sleep cycle, they jolt the body awake irregardless of where you might be in your cycle. Typically, if you're on a routine, you'll be woken up towards the end of your REM stage. The sudden awakening during REM sleep leads to a period of "sleep inertia" where you feel extra groggy. Sleep inertia occurs when the body is woken from REM sleep and is the transitional period between being asleep and being fully awake, it's likely the reason you're immediately reaching for the snooze button. Yet, when your snooze button only gives an extra five minutes, you're heading back

into REM sleep for a few minutes and then launching yourself back into the state of sleep inertia. This cycle can lead to your sleep inertia lasting even longer than usual and making it that much harder to get up. A study at the University of Surrey found that hitting the snooze button in the morning can actually decrease your cognitive performance, functionality and even your mood through the day.

Your sleep cycle is a delicate thing, it doesn't take much to disjoint it and throw it off completely. When you continuously try to catch more sleep in the morning with alarms going off every few minutes, your sleep cycle gets confused as to what it's supposed to do. It's likely that when you try to sleep later that night, your body might not realize it's time to sleep and your sleep will be more restless than usual. That's when this turns into a cyclical habit of always trying to catch up on sleep the next morning and not being able to get to sleep the next night.

A lack of sleep is never good for the body, its side effects range from increased depression to memory lagging to weight gain. Sleeping in in the morning might not be quite as beneficial as you think. With the colder months on the horizon, getting out of bed right away is going to get even harder. So make sure you're going to bed early enough to get your needed sleep and ditch that snooze button.

- Alexandra Sartori

Do you want to get rid of expired medications, but don't know what to do with them?



Stop by the NMTASAP Office on the second floor of Fidel Center to grab a free packet of DisposeRx.

Just add water and the DisposeRx to your pill bottle and shake. The pills will solidify into a harmless "blob" that can be thrown away.



NMT Initial Department Responses to COVID

Note: This article was written the day for the COVID outbreak, so please understand that this was written without that knowledge in mind.

COVID has affected everybody, no debate there. It is often easy to forget this when we have our own problems, but the departments around NMT are composed of students and staff, each going through their own challenges. In an effort to get a more personal take on this, I interviewed Michael Voegerl and James Scott, heads of the Student Affairs Office and Registrar, respectively.

After 20 years in the restaurant business, Michael started at NMT in June of 2014, where he was appointed Coordinator of International Programs, dealing with international students and scholars, study abroad programs, etc. After about 6 months, the current Director of Student Affairs left, leaving the position vacant. Michael filled in for sometime until he was asked to apply. Taking up the offer, he started officially in the office in January of 2016.



I first asked what Student Affairs' first response to COVID was: "Everything kicked off right before Spring Break. We knew something was going on. Our first response was to make sure the students that worked for us were safe and would be taken care of. The first week of Spring Break was business as usual. Then in the second week, we started looking at what our plans were. The third week was when we sat down and created a plan to get in office hours and

get students the services they deserve. We weren't concerned about ourselves, but we were concerned about students in crisis."

In regards to the mental health of his staff, Michael said, "of my employees, the stress has increased. We not only have our families to worry about, but our extended NMT family. We have a group of 'office-frequent-flyers,' and we did a ton of outreach to make sure they were doing well. We feel the stress of COVID, the stress of uncertainty, and we feel the stress of students/staff doing what they can to protect the community."

"In regards to social distancing, it's forced us to rearrange the office, change cleaning procedures, and more. Not having as much student community as we would like to have: in the past, it was not uncommon to see 6-7 students having lunch with the staff. The budget cuts have severely hurt us; we are trying to not cut student services."

Michael continued, describing what his fears were for the semester heading into it, and now: "My biggest fear was the unknown. We had made all these great plans, but my fear after that was: 'what happens when they all get here? Will we be able to maintain safety?'"

"My biggest fear now is a COVID outbreak on campus due to someone's lack of adherence to Tech's established protocols. I worry about Tech students and staff going out of state, partying, etc. I never worried about partying in the past, it's a part of student life, if you have the time, go ahead, but now, I want everyone to make good, safe, smart decisions. But sometimes that is a tough order to fill, for all of us."

His closing remarks were "The Student Affairs/Career Services office is fully open. We are here from 7:30 in the morning to 5-6 in the evening. You can find us online, over phone calls, over email, even Discord. I look at my email up until 10pm. If you have any questions about anything, or need help on anything, we are here. And we have snacks!"

Student Affairs deals with exactly that, affairs regarding students. It is a resource to be used by students, so it functions best if utilized. You can contact Michael himself at michael.voegerl@nmt.edu.

Across the hall was the Registrar, famous (or infamous) among students. The head of the office is James Scott, who has been working in higher education for 20 years. 17 of those years, he has had a Registrar under his command. James had worked at Thunderbird School of Global Management, the #1 school for business until it was acquired by Arizona State in 2014. Being a school with about 2000 students, he is no stranger to small schools,



and prefers them that way.

I again started by asking what his department's first reaction was to COVID: "Our first response was of surprise. They came in on a Wednesday night and basically told us not to come back. Everything students had done with us was one-on-one. Moving out, we weren't prepared. Some people didn't have devices to bring home, some didn't have VPNs working, etc. It took us about 2 weeks to get everything set up. Eventually, we turned around and started coming back, including student workers. [But] we've gone from a personal touch thing to tons of emails. We had a terrible time with that and the repercussions were felt all summer long."

"[My] employees had to adjust to working from home. Zoom meetings became a constant for a while there, up to

4-5 hours a day. Mentally, it was struggling just to do the job right, [but] some people were able to adapt quickly and do a lot of work. A lot of people have families, kids in school. They have to homeschool and work. A lot of children had to learn to work/study from home [as well]. You can set your own schedule, but you end up working either early in the morning or late at night, and for more time."

I then asked about the Registrar's biggest challenges for the summer and the semester: "[In the summer] we converted classes to distance education. The real disruption was doing the Fall semester schedule over again. We had to determine social distancing in a room, and which rooms could handle how many people. For fall, we had to completely redo it, even though students were registered, eating up most of our summer. That wasn't just on us, this impacted Facilities, IT, ACT, etc. A lot of decisions had to be made out of uncertainty. Even the faculty had to rearrange how they teach."

James then gave me insight as to the next semester for NMT: "For Spring, we are going to start with COVID in mind, the same times and everything. It will be easier to go back to the other schedule if COVID is lifted than change over to a COVID schedule. The challenge now is to move as much as I can electronically, such as forms. Going online and getting the forms students need without running around campus the whole time."

"When I first got here, I used to eat in the cafeteria so students could talk to me. I want to make myself accessible to students."

The Registrar, if for some reason you have not been yet, is right in front of the Fidel starwell on the second floor. Just like Student Affairs, it is there for a reason, so if you have any questions regarding your schedule or whatnot, give them a visit or shoot them an email.

Both of these departments are crucial for the success of the NMT student body in their own ways, so when COVID hit, they were hard pressed to adapt, and adapt quickly. Throughout the rest of this semester and the coming Spring, keep in mind not only their services, but the work they put in to make things happen.

- Skyler Matteson