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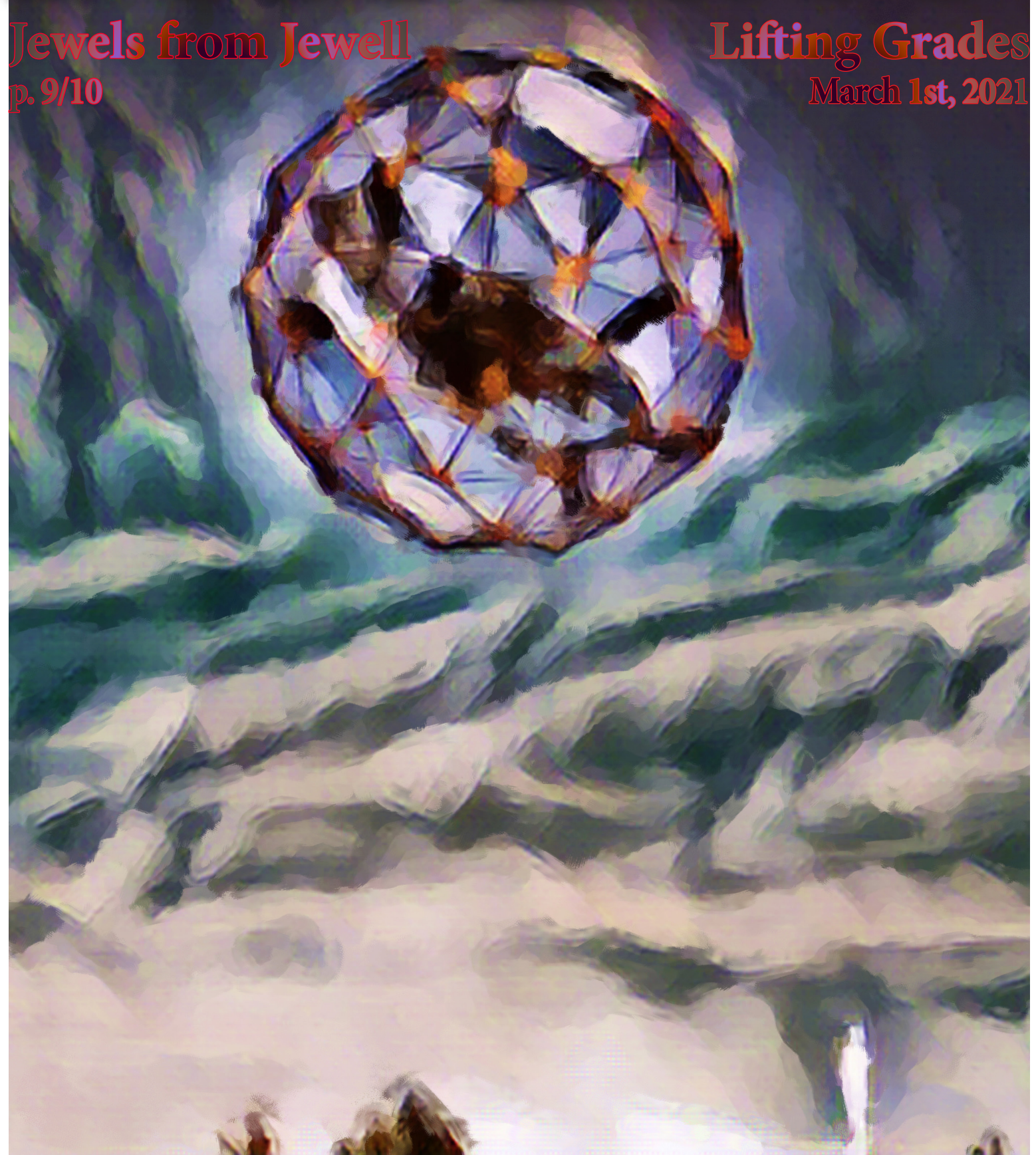
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PAYDIRT

Jewels from Jewell
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Lifting Grades
March 1st, 2021



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SGA Meeting Rundown: 02/23/21

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. **Due to Socorro re-entering the Red state for COVID and the nature of the bureaucratic process, steps for in-person club meetings have been held up but are still in the works.**
3. **A new SATD has been hired to fill in the technical duties of events and the SAC.**
4. **The upcoming Spring Student Forum, where students get to ask administration questions, is currently planned to be held March 10th from 7pm to 8:30pm online, but everything is still up in the air.**
5. **President Bradfield has been working with other student body presidents from across NM on the Lottery Scholarship legislature up in Santa Fe. Their work has seemingly shown results, as the legislature now calls for 5 million to the Scholarship instead of 0. We will keep you posted as developments occur.**
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.**
7. **The COVID Committee at Tech is contemplating a more normal commencement, depending on COVID cases within Socorro during that time.**
8. **SGA meetings are looking to be moved back into the Macey Center, in person.**

- Light - Hygge is most important in the winter, when the sun sets early and rises late, making candles (or fairy lights for those on campus) quintessential. Scented candles less so - many Danes are very confused at what they call a very American phenomenon.

- Warm drinks - Whether you're drinking tea, hot cocoa, or something stronger, it is particularly satisfying to hold a warm mug while hiding from the winter weather outside.

- Kindness - Whether your hygge affair is with your friends or your own thoughts, the key is to engage honestly and kindly. Put aside your ego and avoid bragging. Practice curiosity, acceptance, and listening more than talking.

- Blankets - If you haven't already noticed, elements of physical and emotional warmth are critical for creating hygge. Blankets and your favorite sweater protect against any drafts coming inside, leaving you free to focus on more intentionally connecting to your thoughts or those in your Covid Bubble.

- Snacks - A perfect, cozy moment isn't complete without a bite of your favorite sweet or savory snacks. It's generally agreed upon that the perfect hygge foods are any form of chocolate or cheese - ideally baked brie with crackers and basil.

- Gratitude - Take a second to be thankful for the moment and who you get to share it with. Especially in competitive environments like school, these moments can be hard to find, even if they're scheduled! We do not need to squeeze all our gratitude into Thanksgiving and could greatly benefit from practicing mini-Thanksgiving moments every day.

Written By: Marina Hein

What the Heck is Hygge?

So you can't go anywhere, it's too cold to see your friends and family outside, what now? The Covid Winter is putting extra strain on everyone, especially as winter means less opportunities to safely socialize in physically-distanced ways with friends and family. This means you are probably (hopefully!) spending more time with only your covid-bubble, probably your roommates - or if you live alone, the one other household you have agreed to mesh with. While necessary to help stop the spread of Covid, it might be getting boring, and maybe a little lonely.

Instead of getting wrapped up in frustration about restrictions and traveling FOMO, we can slow down and take stock of where we are: inside, with limited social outlets. We can let the cabin fever get us, or we can figure out how to make it work. One way to do this is through the Scandinavian mindset of hygge (pronounced "hoo-gah") - the Danish concept of coziness. So what exactly is hygge?

Hygge is about the joy from simple pleasures, savoring the present, and the resulting feeling of coziness. This feeling is bolstered by enjoying the company of those around you sans cellphones, ideally with wholesome snacks, warm drinks, fuzzy blankets, and lots of candles. Essentially, the joy of being a homebody! The ever-practical Danish are quick to insist that proper Hygge Ambience is not about buying the fanciest things but using what you have to create quiet moments of joy and coziness. More importantly, hygge is an opportunity to practice gratitude about what you do have and enjoying the present moment unplugged. The focus is on putting aside your ego and intentionally connecting to others around you - or your own thoughts - with kindness.

In this Covid Winter we can't escape being stuck inside with our housemates and ourselves. So instead of chafing at restrictions that, if followed by everyone, will help end Covid isolation more quickly, we can use this time and take the opportunity to slow down, reflect, and practice some hygge.

Some Hygge Essentials as dictated by the Danish:

Part 2 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 22nd 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 29.

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!

Send your submission to paydirt@npe.nmt.edu.

Campus Life

"It always seems impossible until it's done." - Nelson Mandela

Residential Life and COVID



Last semester, I wrote an article on the Registrar and Student Affairs, specifically targeting how they handled and were impacted by COVID-19. I also had plans to interview Residential Life about the situation, but due to time constraints and page length, I could not fit the department into the article. This semester, I decided to 'finish what I started' by interviewing Mitchell Tappen, the now former head of Residential Life.

Tappen started at NMT January of 2009: "My position at the time was Res. Life Coordinator. At the time there were only 4 professional staff, [and] I did the duties of the Assistant Director. I handled office management, room assignments, etc. In May 2010, the director left, [and] I became the intern director. I became the official director in July 2010. I've been the director until last Friday (at the time; 2/12/21). I am still

acting director until we hire a replacement." With the world situation as it is right now, I wanted to ask for what reasons Tappen was leaving. He explained that it was "nothing COVID related, just needed a change. Res. Life nationally, there's always high burnout. Pre-COVID I felt burnout, and then with COVID... (pause) I still wanted to be involved, so when the [assistant director] position came up, it just made sense."

I then directed my questions to Res. Life itself, specifically about what the department does for anyone who is not familiar, and how COVID came into the picture. "RL manages 6 resident halls and 3 apartments. We also manage the meal plans, have 22-34 RA's, process applications, make room assignments, and address maintenance and custodial issues with other departments. We have student, staff, and

Sudoku

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

Relax and Unwind

"Don't watch the clock; do what it does. Keep going." - Sam Levenson

Opals

Does it take you forever to get ready before going? Just start telling people you're an opal. Opals take an exceptionally long time to form, averaging around 5-6 Ma years to form a mere centimeter of the stone.

Opals aren't quite a mineral, they are actually the failed version of a mineral, a mineraloid. Mineraloids differ in the sense that they are missing a crucial part from the precise definition of a mineral, such as lacking a defined crystalline structure or having a chemical composition that varies too widely from specimen to specimen. Opal specifically lacks a defined crystalline structure.

The formation of most opals begins with the drainage of water through silica-rich sandstone. The water mixes with the silica deposits to form a silica water solution that eventually finds its way into small cracks within the Earth. Once deposited in these cracks, the water begins to evaporate off, and the silica is left behind to form the opal.

Humans have coveted the beauty of opals for thousands of years, the iridescence of the precious variety of opals providing a captivating shimmer to the stone. The Roman scholar of the first century, Pliny the Elder, went as far as to say,

"Some opali carry such a play within them that they equal the deepest and richest colors of painters.

Others...simulate the flaming fire of burning sulphur and even the bright blaze of burning oil." Many cultures came up with their own theories on how the stone was formed and even "magical" properties that would come from carrying opal. In Arabian lore, people believed that opals fell from the heavens when lightning struck. In the Greek culture, it was popularly believed that opals were a way to divine the future. The lore around opals didn't even stop with just ancient societies, people of the Middle Ages even believe that opal would help improve eyesight and would commonly be referred to as the "eye stone."

It's postulated that Australia contains around 95-97% of the world's opals. There are many different stories from First Nations people of Australia in regards to the origin of opals, such as the Yuuwalaaraay (yew-wahl-luh-rah) people of the Wallangulla area. The Yuuwalaaraay believed that opals were formed from the death of a malicious crocodile named Gurria. Gurria ate the two wives of the supreme being, Bhiemie, and Bhiemie speared Gurria in order to free his wives from his belly. As Gurria lay dying, it began to rain and the colors of a rainbow got stuck in his scales, forming opals.

- Alexandra Sartori

professional staff on call 24/7/365. We also have summer conference programs to invite students to stay on campus. Our mission is to foster a community that is conducive to academic success."

"COVID affected our duties back in March where within a 3 week span, we went from [about] 650 students on campus to about 100. We told most out-of-state students not to come back, and we told most in-state-students that they could collect their belongings, but not remain on campus. The only people, generally, that were allowed to stay were families, international students, and students without other options. Summer, we only had 30 students on campus. We cancelled our summer conference program, and spent the majority of summer coming up with contingency plans, and contingency plans for those contingency plans, for how we can make the halls as safe as possible. For fall, we added quite a few policies: limited who gets a room, how many people can be in a room or common area, not allowing guests, etc. We did not put students together that did not know each other before. If you applied for housing and did not have a roommate in mind, you got a single room."

"[COVID] affected my staff greatly. It has added a lot more stress to our lives, for factors such as taking the time to come up with new processes and procedures finding safe ways for things such as RA training. Instead of relying on past practices, we had to find new ways to train staff. Dealing with uncertainty of "will we be open for the whole semester, will students get COVID, how will that affect them?" [We've had] more policy enforcement than usual, with masks and limited groups. Our main goal is to create community, and a large portion of that is getting people to get together, and we had to totally rethink how we do that. How do we try to get people connecting virtually in a way that still has meaning?"

"I acknowledge that students living on campus have had to make a lot of sacrifices due to our new policies and procedures. Most college students, their time is present interacting with their friends, hanging out, going to events, just eating together in the dining hall, and that has been taken away. It has led to more isolation, depression, and anxiety. I attribute a lot of that to all the unknown factors that this pandemic has caused. I acknowledge how hard

these sacrifices are to make by students, but I'm very pleased with how we've been able to minimize the impact of COVID on our campus. I'm proud [that] no student, as far as we know, has been infected by someone else on NMT's campus. The fact we've been able to remain open, and there's been so few cases in the Tech community, it's very important to me, but I acknowledge it's taken a toll on everyone."

"I'm optimistic that we will be able to resume more normal activities come Fall 2021. I am concerned with vaccine delays and new variants that seem to be more infectious. I'm worried about everyone getting vaccines before we open."

I then asked Tappen about what he would like to end on, and if there was anything he wanted to tell the student body: "I wanna say, I always put students' physical and mental well-being as my top priority. It is challenging to cope with all the events of the last year; I can only imagine what it must be like to still be developing as a person while coping with all these struggles caused by the pandemic. I want to encourage anyone who is struggling and hurting to please seek out help, and to know you aren't alone, and many others are going through similar struggles as you."

Visit <https://www.nmt.edu/reslife/> for more information about Residential Life, and email Residential_Life@nmt.edu for any questions about the department.

- Skyler Matteson

Club Spotlight: Barbell Club

“Get strong, get buff!” has been the long proclaimed (but often untrue) message of those get-fit-quick fitness ads you can find at a dime per dozen on the Internet these days. With our very own NMT Barbell Club, however, that promise is held true by Cole Dunning, Roman Baca, and Brennan Stubbs, who’ve dedicated their lives to optimizing their physical fitness in every way possible.

A relatively new club on campus, the Barbell club spends their weekly Saturday meetings briefly discussing pointers and tips, occasionally hosting seminars on nutrition and fitness, followed by an hour-long workout in the gym, the focus of which varies from week to week.

“The main focus of [Barbell Club] is really just to get people out and going to the gym,” states the club’s Treasurer and Public Relations, Roman Baca. “I know everybody is lifting mountains with their

minds in class, and so it’s nice to get a break from that [just by working out].” Baca is aware of how intimidating it can be for Tech students who don’t have much experience in the physical fitness realm to enter the gym and see a bunch of super-built guys pumping iron like crazy.

“The thing is, we’re just trying to make the gym seem open to people who [want to better themselves]... and give them the information they need to accomplish their goals.”

Ok, so the club provides a friendly environment where Techies can become more accustomed to the gym, but what if you’re someone with loads of experience working out? Barbell Club’s still got you covered.

The Club is composed of two categories of people; the normal lifters who are there to exercise, build



She began her business around the same time she took up wire wrapping. “It was hard at first, I didn’t have very much confidence in my art and I would sell it for basically just the price of the materials.” Fortunately, through the support of online and local feedback, she’s come to find the worth in her art.

Jewell sells her art through Instagram under the user @jewellvalentinejewelry and at a local store in Albuquerque, Antiques & Things. Make sure to check out her art for your next gift idea or just to treat yourself.

- Alexandra Sartori



Jewelry from Jewell



For some, the decision to choose a specific major is based on nothing more than an interest in the subject but for others, it can be the product of a lifelong love.

Jewell Airhart has been collecting rocks and minerals for as long as she can remember. Her father, having worked as an environmental engineer in the mining industry, brought her into the world of mineral collection and started her lifelong endeavor with them. Jewell is a sophomore in the mineral engineering program, finding that this was the easiest way for her to continue to pursue her passion.

Yet, for Jewell, collecting wasn't enough. She wanted to find a way to put her collection to use and give it a new purpose. Around a year and a half ago, Jewell took up wire wrapping. Wire wrapping is the art of using wire to make jewelry, it's frequently combined with the encasement of a mineral or stone. Wire wrapping has been dated back to thousands of years BC, with one of the earliest pieces being from the Summerian Dynasty dating to 2000 BC. Wire wrapping has survived thousands of years to this point and still remains a large part of the jewelry making craft. Wire wrapping is specifically unique because it is mostly utilized

by individuals rather than large businesses and corporations due to the precise technique needed.

Jewell found that wire wrapping was the perfect way to give her collection new life and it also gave her a creative outlet. The intricacy of a wire wrapped stone can vary highly between artists, some being as simple as just encasing the stone securely and others creating complex works of art. Jewell prefers to create jewelry with high attention to detail, "I take it further than [some artists] and add my own artistic touch to every piece." It can take her weeks to complete even a single piece depending on how complex the design.

Jewell's design process begins with a mineral that she specifically wants to work with. She then finds inspiration from the characteristics of the stone she's working with and creates a design that will complement it best. "The rocks themselves is where I get most of my inspiration for the artistic parts." Her favorite to work with being opals, a brilliantly iridescent mineraloid.

Jewell doesn't just make art, she also sells her work as well.

muscle, become more informed on physical health and nutrition, etc., and then there's the competitive section of the team, which is comprised of those who are physically enabled to go out to competitions hosted by the official United States Powerlifting Association (USPA) in other states.

As mentioned previously, the Barbell Club is only a year old and is not to be confused with the Powerlifting Club, which is a separate club on campus focusing more on working out and less on educating students on proper physical fitness.

"We have our normal powerlifting workouts... [but we also] do seminars on the basic three main lifts... [as well as] seminars about nutrition, about programming for whatever your goals may be for that year or semester."

For any who are interested in learning more about Barbell Club, all are welcome to join the weekly meetings hosted in the gym's Yoga Room (first door on the left at the bottom of the stairs) on Saturdays at 11 AM. For more information, contact nmt.barbellathleticclub@gmail.com and until then, I've been Isaiah Padilla, esteemed Paydirt journalist, signing off.

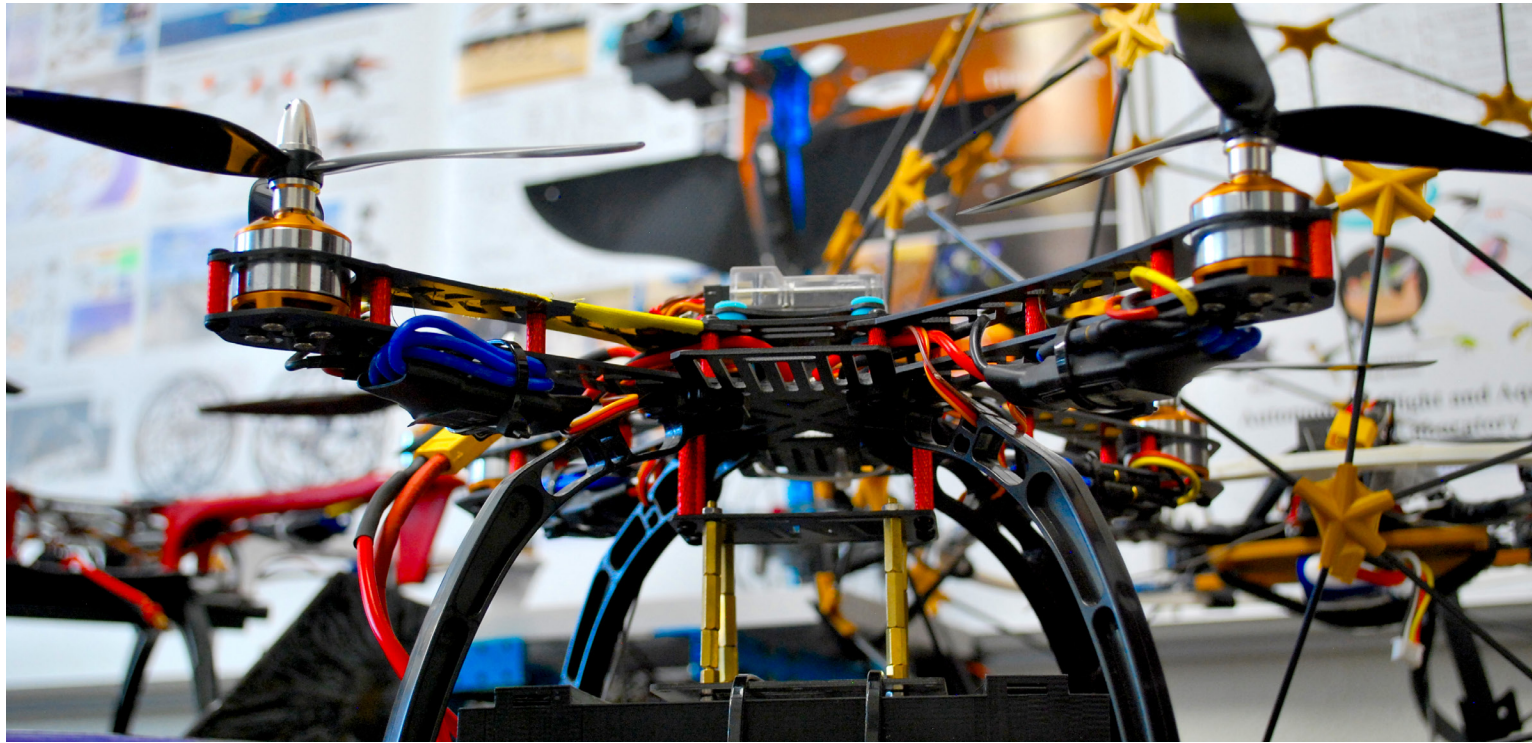
- Isaiah Padilla



Science and Research

"If you fell down yesterday, stand up today." - H.G. Wells

Flying Into the Unknown: Drone Exploration with Dr. Hassanalian



During these trying and difficult times, many of us have turned to various alternate outlets through which to explore our lives and the world around us. However, Dr. Mostafa Hassanalian, a Mechanical Engineering assistant professor here at New Mexico Tech, chose to explore the universe beyond our world, beyond our solar system even.

For many years, Dr. Hassanalian has conducted research and development on a multitude of autonomous drone exploration projects and is currently working with the Autonomous Flight & Aquatic Systems Laboratory to do so. Assisted by graduate students, he focuses on tackling the various problems with are part of the "outer space exploration" package; these include the environment, technological limitations, and design practicality, to name a few.

Thanks to a design process called biomimicry, however, Hassanalian hopes to overcome many of these challenges quickly and efficiently. Biomimicry is a form of looking at nature, or rather, the animals within it, and paying attention to how those organisms interact with the world around them, how they adapt, how they survive. In other words, it's copying what nature does organically and turning that into a mechanical process. A number of advancements to the world of drones have resulted from this design process, and not just in the most straightforward sense of the phrase.

While some advancements have come in the more commonly thought-of form of technological strides, a great deal more have emerged from the way that scientists such as Dr. Hassanalian approach outer space exploration through drones. For example, on a planet such as Venus, the research team here at Tech is working on a drone capable of harvesting energy of several different forms available on the aforementioned planet, primarily solar energy given Venus' close proximity to the Sun.

Despite the relation in the broad mission statement, the team working on a drone intended for one of Saturn's moons, Titan, has a vastly different design due to the altered requirements set forth by Titan's environmental conditions. To give a bit of background, lakes that are primarily composed of hydrocarbon were discovered not too long ago on Saturn's largest moon, and NASA is planning to send out a drone to explore the potential presence of life within said lakes by 2026 to arrive by 2036. Such as trip would naturally require a long-lasting battery system which would, for practical purposes, would likely need to find some way to refuel or recharge upon arrival.

Therefore, Hassanalian and his team are working to creating a multi-layered drone construct, involving several systems to not only harvest and gather data from the lakes but also

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from the environment. Their current model is composed of a submarine drone attached to a vertical takeoff/landing (VTOL) drone, the former of which would contain a methane harvesting membrane as its' personal form of energy intake and the latter of which would release a floating landing platform on which to rest when not in use. However, one of the hardest in the VTOL drone's engineering process is the dynamic soaring feature.

Crazy as it may sound, dynamic soaring is inspired by nature; again, using biomimicry, scientists were able to model the way birds optimize the way they catch the air and glide through it, using as little energy as possible while travelling the maximum amount of distance for said energy expenditure. Three-dimensional models are often created for the purpose of identifying the most critical and influential points on a bird's wing during flight and to trace the airflow around the wings.

A similar method is used for sub-aquatic machines, where, instead of using birds as the organic model, manta rays are studied. In a manner recalling the method used to trace airflow around birds' wings, three-dimensional models are employed to help engineers and scientists trace the pathways followed by water as the manta ray glides through the water, once more demonstrating natural energy efficiency and

optimization as work.

Dynamic soaring isn't the only technique engineers use from nature; to give a few brief examples, flocking and swarming has also been used with drones (as with bees or birds) to accomplish a multitude of tasks or to simply optimize airflow and group travel. Penguins have been studied for their use of huddling up together in order to conserve energy and heat, which is applied in a similar fashion to drone energy conservation. Butterflies have also been studied for drag reduction in drone flight, as a tangent from the study of bird flight and dynamic soaring from earlier.

To put it simply, nature has quite a bit to offer when it comes to designing and building autonomous systems intended to interact with extra-terrestrial environments. As a result, Hassanalian and his teams will certainly find no shortage of work or inspiration where nature, biomimicry, and drones are involved. For anyone interested in learning more about the research and development Dr. Hassanalian conducts, please contact mostafa.hassanalian@nmt.edu. Until next time, I've been Isaiah Padilla, esteemed Paydirt journalist, signing off.

- Isaiah Padilla

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