

Emily Winfield Earns Young Engineer of the Year



On February 26, ASPE held the 2022 Engineers Week Banquet at the Westmark. The evening started off with music by The Headbolt Heaters and a welcome by Emily Winfield. Master of Ceremonies, Samuel Mitchell, EIT announced the winners of the ASPE scholarships.

The highlight of the evening was Bob Gras announcing the winners for the Engineers of the Year. A special congratulations goes to our very own, Emily Winfield, who won the Young Engineer of the Year award.

Congratulations Emily!



President's Corner

Teamwork (Iditarod)

I just spent a week out on the Iditarod Trail watching the dog teams race their way to Nome.

I was struck with how the mushers bonded with the individual dogs on their team and constantly monitoring their performance out on the trail. Every dog had different attributes and personalities that contributed to the team's successes, and yet they all had to work together to make it to the finish. I found this relationship very similar to the team dynamic within Design Alaska where each individual's differences and personalities work together to provide successful project outcomes.

It was important to have the right dog in the right spot in the team for the conditions. The mushers knew that one dog was better at leading the team in deep, soft, slow snow, where others were better when the trail was twisty, hard, and fast. They knew the capabilities of each dog and put them in the best spot for the moment.

Additionally, whether they are moving or resting, the musher could tell how each dog was doing. They watched their eating habits, how they laid, sat, walked, and especially their 'discharge' to understand their needs. Thankfully, as humans we can actually vocally express needs as part of the team and share how we are doing to make changes as needed.

The musher, as the leader of the group, had a big effect on the team. The musher had to get rest so they could continue to be alert, attentive to the details, and know their own energy expenditure to keep them and their team moving at top performance. It was interesting to observe that when the leader's attitude waned, the dog team responded with enthusiasm to help move the musher down the trail.

I know the connection between dog team and a design team may be subtle, but it was amazing to watch teamwork on such clear display, and really appreciate the teamwork that we do in our work. I thank you all for being part of Team Design Alaska, and I am excited to keep working toward our goals of great design and positive experience for our clients for years to come.

Chris Miller, PE

~President, Design Alaska

Teamwork (In the Office)



Marcus Curley and Emily Winfield recently completed the rebuild of the PRDV (pressure reducing valve) in the Annex Building. Emily has been monitoring the pressure and it is working fine.

To the left is the only photo they took, but they did film it for training in the mechanical department.

From the photo you can tell Marcus did most of the work.

Interior Alaska Snow Loads

By Patrick Brandon, SE

SO MUCH SNOW! As a structural engineer born & raised in interior of Alaska, I believe I can shed some light on our current snow load, historical snow loads, and how your roofs might be feeling. I hope you find this helpful:

Current Snow Loads

We've had an impressive amount of snow this year. In fact, this is the most snow we've seen in almost 30 years! We've received over 90 inches of snowfall as of March 15th. The last time we had more snow was the winter of 1993 when Fairbanks received 140 inches. 1991 was the largest snowfall on record in which a total of 146 inches of snow fell. The first figure shows the 20 highest snowfalls on record dating back to 1930 (2022 data hasn't made the chart yet). Our 2022 snowfall has now surpassed the 2021 mark, making this year's snowfall at least the 10th largest on record.

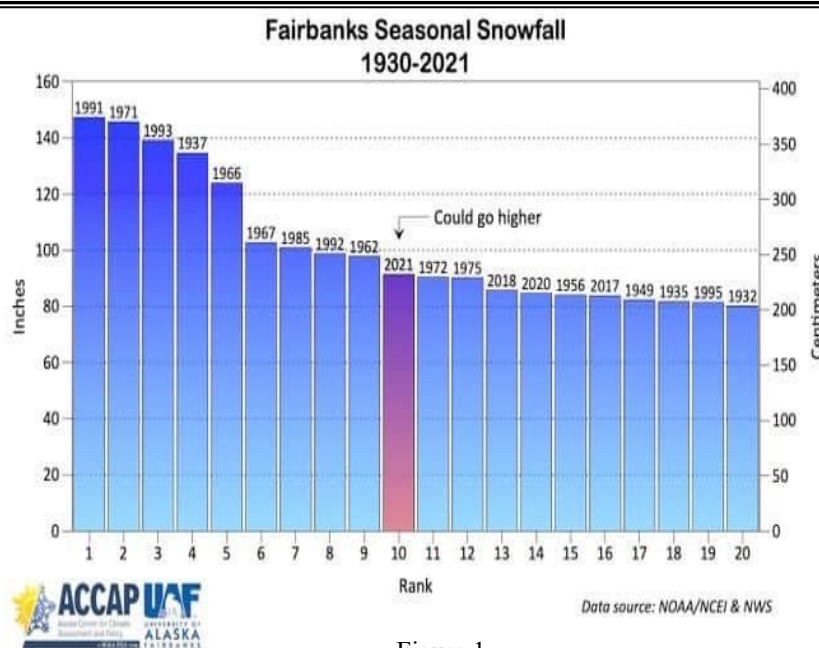


Figure 1

Total inches of snowfall is an interesting metric but is generally useless for structural engineers. What we are interested in is how much does it WEIGH? There is no direct conversion from inches of snow to weight because the density of snow is variable. Instead, the industry uses a measure called Snow Water Equivalent or SWE. This is a measure of how many inches of water the snowpack contains. This is useful as water has a uniform density, making it possible to convert inches of water directly to pounds per square-foot. Every inch of water equates to 5.2 pounds per square-foot.

NRCS Alaska Snow Water Equiv Map

[Weather.gov > Alaska-Pacific RFC > NRCS Alaska Snow Water Equiv Map](#)

River Observations and Forecasts Weather Observations and Forecasts Water Supply Climate and History Seasonal Interest Additional Info

NRCS Snow Water Equivalent - Current

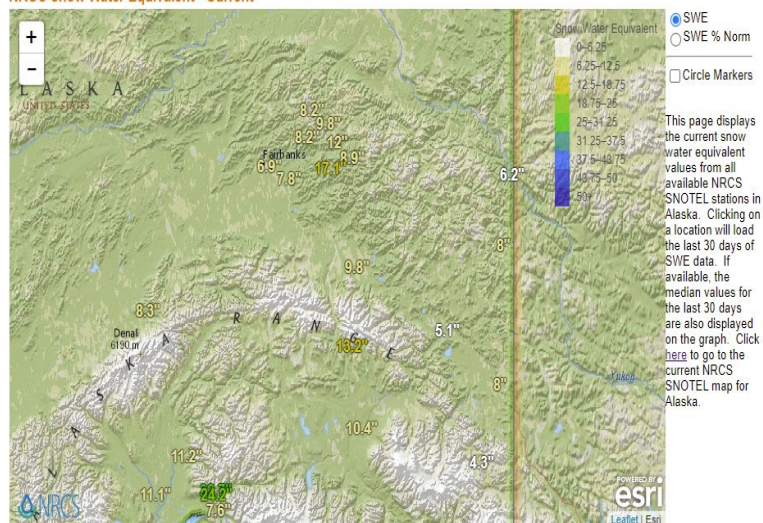


Figure 2

There are two weather stations within the Fairbanks and North Pole areas that report SWE daily, one here at Creamers Field and the other at Chena Lake (lake is singular, per John Rowe). These weather stations are maintained by the Natural Resources Conservation Service (NRCS). At the time of writing this, Creamers Field is at 6.9" SWE (35.9 psf) and Chena Lake is at 7.8" SWE (40.6 psf). The SWE or "inches of water" is also useful in predicting springtime runoff volumes. Get ready, 7" of springtime snowmelt is a LOT. To put our current snow load in historical context, the SWE for the winter of 1991 was 12" (62 psf ground snow load).

NoAA in conjunction with NRCS have an online map in which you can see the daily SWE information (Second figure), you can find it here:

https://www.weather.gov/aprfc/nrcs_AK_SWE

Interior Alaska Snow Loads Continued...

How Much Snow is on Your Roof?

One common line of thinking is that the snow load on the ground (36psf currently here in Fairbanks) is the same that is on your roof. This can be the case but often it is not. Roof snow loads are often less than that on the ground. In structural engineering we use an equation to convert what's on the ground to what we expect to see on the roof. It goes like this:

Roof snow load =

70% Ground Snow load

*1.1 if you have a cold roof (1.0 if hot)

*1.2 if your house is closely surrounded by tall trees (1.0 if in an urban neighborhood)

*1.0 for residential housing (1.2 for fire departments/police/hospitals)

Using this equation with our current 36 psf ground snow load, we'd anticipate a residential home with a cold roof in town to have a roof snow load of ~28psf. A house tucked into the woods with a cold roof could have ~34 psf. Design Alaska recently measured about 15 residential housing units in the Fairbanks and North Pole areas and found that the this calculation generally holds true. An aside: Our own building was found to have a roof snow load of 32 psf on March 1st and a ground snow load of 34 psf. How do we get this data? The last photo is of Samuel taking a rooftop snow sample a few weeks ago.

What is your Roof Designed to?

This by far is the most difficult question to answer. Having a copy of your building's original design drawings is the easiest and most reliable way to find the answer. Structural engineers have been required by building code to list the design loading on the plans for decades. If you have your drawings, there is a good chance the design load is listed on them. That said, if you're like most people, you don't have them. Barring knowing what it was originally designed to, it pays to know what structural engineers and truss designers have historically designed interior Alaska homes to. The following is an outline of Interior Alaska's brief snow load code history, this can be used as an indication of what your building may have been designed to:

City of Fairbanks Requirements (applies only to buildings within city limits)

- Pre 1970: Snow load requirements were not uniform and left to the judgement of the design engineer and local building official. Through experience with designs from this period, it appeared standard practice to design roofs for a snow load of 40psf. We have, however, come across roofs designed for 30psf.
- 1970: The City of Fairbanks amended the building code to require a minimum 40 psf design roof snow load.
- 1991: The City of Fairbanks amended the building code to require a minimum 50 psf design roof snow load – It remains this way currently.

Interior Alaska Outside the City of Fairbanks

- Pre 1982: Snow load requirements were not uniform and left to the judgement of the design engineer and local building official. Through experience with designs from this period, it appeared standard practice to design roofs for a snow load of 40psf. We have, however, come across roofs designed for 30psf.
- 1982: This is the first time the UBC listed design snow loads for Interior Alaska. It listed a Fairbanks Ground Snow Load of 55psf. This translated to a 36psf roof snow load (UBC used a similar formula to that above: 60%, 1.1 for cold roof, 1.0 for urban, 1.0 for residential).
- 1995: The UBC revised the 60% to 70% and increased the ground snow load to 60psf. These two changes resulted in a design roof snow load of 46psf – It remains this way currently.

Interior Alaska Snow Loads Continued...

Should you clear your roof?

If you know what your building was designed to, and the uniform snow load exceeds that, it is best to have the snow removed. The design load listed on the drawings is the load that your building can safely support using the allowable strength of members as established by the building code. Roofs subjected to loads in excess of the listed design loads increase the stresses on the members, increasing the probability of failure. This increase in the probability of failure is beyond the margins established by building code. It does not mean your structure will fail; it simply means the odds of failure are now greater than what the building code originally allowed.

If you don't know what your building was designed to, and are worried about its capacity, hiring a snow removal company to remove the snow may be the right thing to do; peace of mind is worth a lot. Another option would be to consult with a structural engineer to help you make a decision on next steps.



Some things to keep an eye out for and call an engineer should you see any of the following:

Excessive deflection - Roof beams and joists should appear flat to the naked eye. Deflections that are easily perceptible by looking straight at the member can be an indication that the member is overloaded. Garage door headers are typically a good place to look.

Rot – Rot due to water leakage can weaken a member such that it fails before its design load. Keep an eye out for water staining and spongy wood.

Damage – Cracked/broken members from impacts. It goes without saying that this is a condition that can reduce the strength of the member.

Roof drains on Flat Roofs – Make sure your roof drains are free flowing. Often these drains are heat-traced. If they are heat traced, it is a good idea to turn that heat trace on in the springtime months to make sure your roof is draining properly. Plugged drains can cause water accumulation around the drain. This water accumulation increases the load on the roof in these areas beyond the uniform snow load that still exists on the roof.

Misnomers

Finally, I feel it could be helpful to dispel some common misconceptions about rooftop snow loading and the engineering behind it:

There are no building codes outside city limits: There are indeed building codes outside of the City of Fairbanks. The difference is that there is effectively no enforcement of the building code when you're outside City jurisdiction.

Roof snow load increases as temperatures warm in the spring: Snow density does increase with the springtime warmth. This is due to the snow warming, partially melting, and reducing in volume. While snow density does increase, the total MASS of snow on your roof largely stays the same. The only way mass is increased or reduced is with new snowfall or melt.

Employee Spotlight - Jack Wilbur

Each month we will post a questionnaire from employees who have been at Design Alaska the longest. Our first spotlight is on Jack Wilbur. Jack has been with Design Alaska since May 1975. He has held many different positions, beginning as an engineer in the Mechanical Department when Design Alaska was still known as Ellerbe. Jack then became the head of the Mechanical Department before becoming President of Design Alaska. Jack is currently the CFO of Design Alaska.

Why did you apply for a position at Design Alaska?

I was looking for a job in mechanical engineering in Fairbanks. In 1975 Design Alaska, at that time Ellerbe, was the only firm in Fairbanks with a mechanical engineering department. The department was brand new with only one other mechanical engineer, Bill Pike. The department was located at the south half of where the production staff is now located.

Tell us about yourself. Where did you grow up?

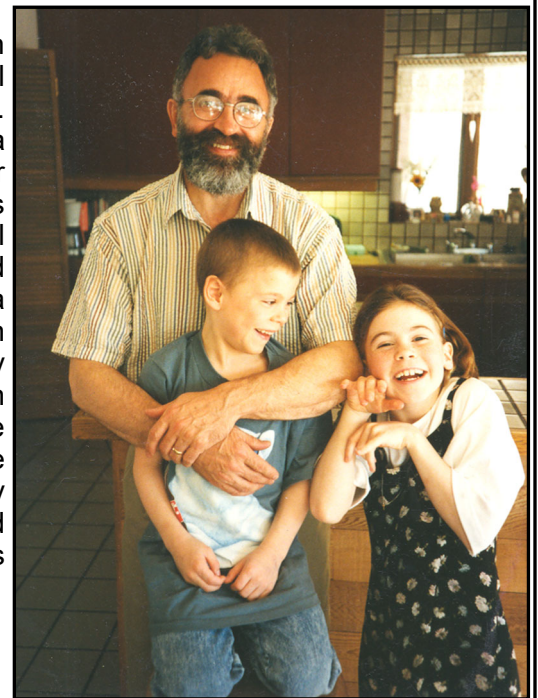
I was born in Fairbanks in 1948 and it has been my home ever since. The population of Fairbanks in 1948 was about 5,000. It was a wonderful place to grow up and is, I believe, an even better place to live now. There was a period of about 7 years, 1968 to 1975, when I didn't spend much time in Fairbanks; I spent 3 years at the University of Colorado Boulder, 2 years in the Army at Ft. Greely, and about 1.5 years traveling - one winter throughout Europe in a VW bus and another winter throughout the western US and the Baja peninsula in my 1966 Chevy pick-up.

Tell us about your family. Do you have a spouse or partner? Any children or pets?

My parents were Jack and Charlotte Wilbur, who were also born in Fairbanks and lived here most of their lives. My maternal grandmother, Charlotte Geis, was also born in Fairbanks in 1904. I've been married to an artist, Carol Wilbur, for 35 years. Carol has a studio at Well Street Gallery. We have two children: Sara Wilbur who lives in Flagstaff, Arizona and works for Translational Genomics Research Institute (TGen) an Arizona-based, nonprofit medical research institute, and Aaron Wilbur, a surveyor for Design Alaska. We currently have no pets although we do have the pleasure of taking care of Aaron's dog Friday (also known as Fried Egg) whenever he is out of town.



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Employee Spotlight- Jack Wilbur—Continued

Do you have any hobbies, hidden talents, or collect anything special you would like to tell us about?

No real hobbies, hidden talents, or collecting interests. My passions are outdoor activities including downhill skiing, cross country skiing, biking, walking in the woods, camping, floating rivers, and fishing. I participate in ultimate frisbee, floorball, and pickleball clubs. I am also an avid reader of fiction and non-fiction. I am currently reading the Red-Haired Woman by Orhan Pamuk.

Name one thing that not many people know about you.

I was Lathrop High School's intra-mural table tennis champion my senior year.



If you could live anywhere in the world, where would you live?

I will probably never live anywhere else, I love Fairbanks.

Are you a morning or a night person?

Morning.

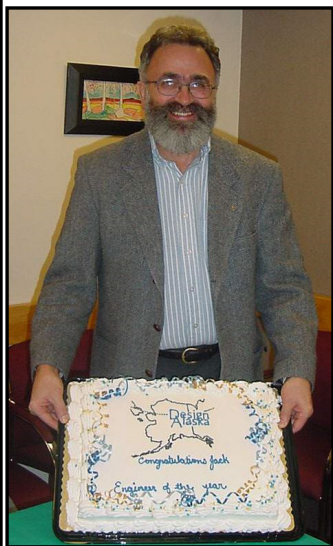
What is your favorite song? What is your favorite movie? What is your favorite childhood TV show?

Song: "Anthem" by Hollis Peach on their Sometimes We Feel the Same album. Check it out on Spotify.

Movie: Forrest Gump.

Books: A Prayer for Owen Meanie and Cider House Rules by John Irving and Jitterbug Perfume and Yellow Legs and All by Tom Robbins.

Childhood TV show: My childhood predated TV. When we did get a TV, Disneyland was the family favorite. Every Sunday night at 7 pm.



What is your ideal meal?

My mom's fried side pork and boiled potatoes with milk pork gravy. Side pork is bacon before it is cured. Unfortunately, my mom is no longer here to make it for me.

Tell us one of your goals on your life's to do list.

To maintain my health and physical strength in a condition that allows me to continue to do those activities that I love for many years to come.



Employee Spotlight – Eric Gabrielson

Eric works in the Survey Department. Although, chances are if you have had any technical issues, Eric has helped you out with those as well. Eric has been with Design Alaska since July of 1994. Enjoy this spotlight on Eric and these awesome throwback pictures.



Why did you apply for a position at Design Alaska?

I didn't actually apply for a job here. Design Alaska heard about me through a mutual friend and asked if I would be interested in working here. I had steady work in Prudhoe Bay, and when I was first contacted, I was surveying for a remote mining camp in the Brooks Range. My "interview" was over a short-wave radio broadcasting through a repeater! When you were done talking, you would have to say *over* to indicate that you were through. The opportunities that Design Alaska offered fit my skill set and future goals perfectly.

Tell us about yourself. Where did you grow up?

I grew up in the Finger Lakes region of NY. My father was the president of a land surveying company, and he put me to work over my summer breaks at the age of 14. After graduating from high school, I started working full time. The company had a satellite office in Connecticut, and would frequently "loan" survey crews to them. I always volunteered to work on the travel crew, we surveyed throughout New England. I lived and worked out of hotel rooms for years. I began to realize that I wouldn't advance in my profession if I didn't get a college education, so I enrolled in school. After getting my AAS degree in NY, I moved to Anchorage to get my BS degree.

Tell us about your family. Do you have a spouse or partner? Any children or pets?

Met my wife Suzanne in our hometown shortly after high school. We have a very successful son and two beautiful grandchildren.

Do you have any hobbies, hidden talents, or collect anything special you would like to tell us about?

My hidden talent, if you can call it that, is cooking. I enjoy the whole process, from planning through execution. If it involves making stock days before, proofing doughs, hours of simmering, or slow cooking all day with a glass of wine – I'm in!

Name one thing that not many people know about you.

I am a huge fan of the Grateful Dead and Jerry Garcia Band. I maintain a large digital archive of their live music, always searching for upgrades.

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Employee Spotlight – Eric Gabrielson - Continued



If you could live anywhere in the world, where would you live?

I have a beautiful house on Seneca Lake in NY. If I'm not in Fairbanks, I will be there.

Are you a morning or a night person?

I'm not an early riser if I don't need to be, so I guess that makes me a night person.

What is your favorite song? What is your favorite movie? What is your favorite childhood TV show?

My favorite song is whatever Dead show I'm listening to at the moment.

What is your ideal meal?

I'm equally happy eating at a 5-star restaurant, or eating burritos around my bar with friends. I make excellent pizza and calzones.

Tell us one of your goals on your life's to do list.

I would like to purchase a boat and do the Great Loop. It would start on Seneca Lake, go through the canals to the Great Lakes, down the Mississippi River, across the Gulf, around Florida, up the intercoastal waterway to NY, then through the canals back to Seneca Lake. It takes about a year to complete the trip.

Is there anything else you would like to share?

I can't imagine a better company to work for than Design Alaska.



Running Group

Josiah, Isaac, Ryan, Samuel, and Marina enjoying a quick 3-5 mile run during our lovely March weather.

The group gets together once a week for a 3-5 mile run. If you are interested in joining and getting some fresh air, message Marina and she will let you know when the next meetup is.

Way to get out and enjoy the winter, Design Alaska!



What is the best thing that happened to you in 2021?	
Mary Sue Dates	Letting go of unhealthy relationships, mindsets, attitudes, and behaviors. Finding a community of people who walk and live in accepting people for who they are and loving unconditionally, as we are loved. Learning how to make myself and my health a priority.
Chris Miller	I learned a ton about how individuals can get mental health help and the support network that is available.
Eliza Cink	The highlight of 2021 was definitely buying our first house, and getting to set up a home!
William Guevremont	Lots of love and support from my beautiful wife during and after my arm surgery!!
Marina Jones	2021 🔊 <i>Noun.</i> /ˈtwɛnti/ /ˈtwɛnti/ /wʌn/ When your expectations are so low that just surviving the year is considered a major win.
Molly McGuire	I finally made it to Morocco after a 1 year delay in the tour I booked. It was an amazing trip. I visited Hassan II Mosque (the 2nd largest functioning mosque in Africa), had a drink at Rick's Café, wandered through a medina filled with so many mannequins it was a bit creepy, visited the tannery in Fez and listened to the cacophonous call to prayer from the roof top of our riad, stopped for coffee in the ski resort town of Ifrane, fed some monkeys, swam in a surprisingly cold swimming pool under the stars on the edge of the Sahara desert, rode a camel for 2 hours to stay at a "glamp ground" in the desert, drank tea with a family from a Bedouin nomad camp (twice), danced with a group of Gnawa musicians, saw gypsum in its natural form, went for a hike through Monkey Fingers Gorge in the Dades Valley (which involved squeezing around boulders, climbing over boulders, crawling under boulders, climbing a steep incline at the end, then taking a nice leisurely stroll back via the trail that runs along the edge of the gorge), stayed at the beautiful hotel near the end of the Dades owned and run by one of our tour guides and his brothers (who's mother also invited us to lunch at their family home), visited the seaside and listened to a musician perform reggae music in the square while drinking a latte, saw goats in trees, had dinner at the night market in Marrakesh, successfully avoided the snake handlers, visited a hammam, and bought a teapot. And so, so much more.
Dantasia Baum	 KAMREN! 

What is the best thing that happened to you in 2021?

Blake Burley	Easy, I married my best friend!		
Cathryn Petersen	I got hired to work at Design Alaska!		
Mitchell O'Bryant	Had our first child!		
Robin Rader	I got a very nice new chainsaw for Christmas! I was not expecting it. All sons-in-law pitched in.		
Adam Shilling	Continuing my career with a new job at Design Alaska!		



Coffee and Pickles

One thing that Veggie Days has proved is that Design Alaska has a large number of pickle lovers. If you aren't at the veggie tray within 5 minutes of Jim setting them out, you are likely to miss out on pickles.

However, no pickle lover compares to Sam Mitchell. Sam is known for his morning "Coffee and Pickles."

Samuel is loving his new coffee cup from Sabrina and Ciarin.



April 22 marks Earth Day, a global celebration fostering a clean, healthy environment and a more prosperous future. Here are some tips from Keep America Beautiful as a way to carry out spring cleanup without causing undue harm.

Now is not the time to do a big purge, which would result in leaving larger than normal amounts on the curb to be picked up. As people spend more time at home, waste collection systems across the country are experiencing a strain due to increased residential waste. Focus efforts on cleaning up, not cleaning out this spring. Here are ways to spring clean without creating excess waste:

Donate: If you do clean out closets, attics, basements, pantries, etc., it is recommended to box up and take the items to your local donation center not to the landfill.

Spruce up the yard: To avoid adding extra trash, consider starting a compost pile.

Freshen up: Many spring-cleaning activities won't result in excess waste like cleaning windows; dusting; organizing seasonal clothes or décor; washing cold-weather items, like sweaters and heavy jackets, before storing; organizing the fridge and pantry; flipping your mattress; wiping down blinds; and sweeping under large appliances.



Health Goals to Aim for in 2022

By Seraine Page

On TotalWellness.com



The following health goal examples are a great starting point for kicking off the new year in a healthier way. Focusing on your health in the post-pandemic era is a smart move as those who stay on top of their health have stronger immune systems and better mental health to deal with any illness that may come their way.

1. Create a Morning Routine You Love
2. Make Time for Self-Care
3. Explore Art Therapy
4. Find a Supportive Community
5. Aim for Seven to Eight Hours of Sleep
6. Use a Pedometer
7. Workout At Least Three Days a Week
8. Try Using a Food Journal
9. Unplug From Electronics Often
10. Learn How to Meditate
11. Experiment With Different Stress Management Techniques
12. Dress Up to Feel Better
13. Stretch Daily
14. Get Outside Daily
15. Work on Your Memory
16. Try a Heart-Healthy Recipe Once a Week
17. Give Hugs
18. Schedule All Your Doc Appointments
19. Don't Forget Follow-Up Doctor's Appointments
20. Give Therapy a Try
21. Read More
22. Stop Black-and-White Thinking
23. Eat the Rainbow Daily
24. Prioritize Gut Health
25. Cut Down Your Sugar Intake

Read the full article here: <https://info.totalwellnesshealth.com/blog/health-goals-examples>

March 2022 ~ Upcoming Events

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2 Table Massage	3 Managers' Meeting	4	5
6	7	8	9	10	11	12
13	14 Birthday Celebration	15	16 Table Massage	17 St. Patrick's Day 	18 Design Alaska Closed	19
20	21	22	23	24	25	26
27	28	29	30	31 Managers' Meeting		

March Birthdays

Jeff Leonelli	March 3
Mary Sue Dates	March 7
Mike Schuetz	March 15
Samuel Mitchell	March 21
Susan Walker	March 22
Elmer Degerlund	March 27
Chris Miller	March 27
Adam Shilling	March 31



April Upcoming Events

Table Massage	April 06
Birthday Celebration	April 11
Table Massage	April 20
Administrative Professionals Day	April 27
Managers' Meeting	April 28

Design Alaska Anniversaries

Kym Pihlaja	21st Anniversary	March 1, 2001
Jeff Leonelli	12th Anniversary	March 22, 2010
Brian Marmor	10th Anniversary	March 5, 2012
Ryan Morse	2nd Anniversary	March 2, 2020

