



Kiwanis Club of the

Foothills

Club Website: www.foothillskiwanis.org

Meetings: Monday at 7:00 am at Coal Creek Clubhouse, 585 W Dillon Rd, Louisville, CO 80027 (303) 666-7888

June 28, 2021

Coming up . . .

7/5/21-Roundtable Fellowship Meeting, Happy Fourth.

7/7/21-Board/Foundation Meeting.

7/12/21-Premier Mortgage Presentation by Leah Colby Alexis **Energy**

7/19/21-Dark Sky Movement & Broomfield by George Wolf. Foothills Kiwanis Club

7/26/21-2021 Kiwanis Convention Highlights with Brian Coleman

Program Chairperson:

July-Bill A.

Aug-TBD

Snippets from Recent Club Meetings

5/10/21, David Petrick, Hydrogen in Aviation/Green Energy

member David Petrick was born in Bozeman, Montana. After moving to Colorado, he attended the Colorado School of Mines in Golden, receiving both a BS and MS in Chemical Engineering. David began his career working for NASA and then joined the Ball Aerospace Division in the Cryogenics Group. Hydrogen is an ideal gas whose behavior follows the formula PV/NRT. Its temperature can go down to -350°F where it becomes liquid and the equivalent of 1/15 of a gallon of water. It is the most flammable gas and will burn between 34 and 74°F. At the critical pressure of 196 PSI, Hydrogen becomes a super critical fluid where two molecules are joined. Hydrogen is the most abundant gas in the atmosphere. Hydrogen is very environmentally friendly. Hydrogen treated with Ammonium is called "blue hydrogen" and can be used to absorb CO₂. Solar farms can be used to electrolyte water to make hydrogen. This is called "green hydrogen". The largest hydrogen liquefier was built in Boulder in the 1950's at the National Bureau of Standards. Hydrogen rocket fuel is a powerful propulsion fuel, yet light. It can store both electrons and protons. Because the density of hydrogen is relatively low at the highest pressures, large amounts can be stored in smaller vessels. Safety is a big issue because Nature cannot be fooled. In 2003, the Columbia disaster inspired a closer look at a different future plane design. The Columbia failed because moisture condensed on the outside surface and formed an ice block which caused the failure. Hindenburg was a solid frame airship. It was filled with hydrogen rather



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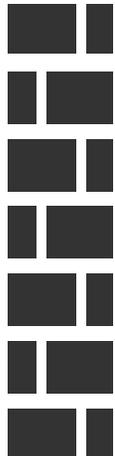
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than helium. It hit the docking tower and the hydrogen exploded destroying the airship. Because hydrogen is difficult to work with, American rockets are the primary users. The Saturn V rocket and Elan Musk's star ships both use hydrogen fuel. Hydrogen and kerosene have equal propulsions, but hydrogen is 1/10 the weight. Fuel cells are the future of propulsion. Hydrogen and oxygen over a catalytic surface create an electric current. This is used for electric power on manned space crafts. This process removes one proton of hydrogen but leaves a proton. Hydrogen fuel cells can power automobiles and can also be burned in combustion engines although there are emissions created in the process. There are minor gains in efficiency versus a gasoline powered car. NASA has the largest hydrogen storage facility in the world. Nearly 30% of the hydrogen is used to liquify. In summary, the advantages of hydrogen are low density, low freezing temperature, and safety converting into alternatives. Thankyou David for an informative presentation on hydrogen and its environmental uses in the future.

5/17/21-Chrysti Brill, Executive Director, Cultivate

Chrysti Brill holds a BS and MS degree in Criminal Justice stressing Social Justice. In 2020 Chrysti received a Recognition Award for service to the community. Chrysti has a daughter, twin 14-year-old sons, and three dogs. Cultivate used to be RSVP, and Foothills Kiwanis is a former sponsor of RSVP. Cultivate serves the community. RSVP started in 1972 as a senior



volunteer program. Volunteers were placed in areas of need. Now the mission has been modified to peel back to the basics of the organization. The basic goal of Cultivate is to help seniors flourish by participating in the community. The organization did not want to waste the senior's many years of experience by shunting them aside. Cultivate partners place volunteers in any area that they are passionate about. The organization strives to find areas of passion for all their volunteers. Cultivate is a fix it program. For example, repairs so seniors are safe in their homes. Some of the services provided are installing grab bars, fixing any carpet that is coming up, and wheel chair and walker repair.

The "Snow Buster" and "Yard Buster" programs keep walkways and driveways free of snow and safe for the seniors as well as keeping the yards looking good. Seniors are also taken shopping for groceries, and they pay for their own. This was an invaluable service provided by Cultivate since food was difficult for seniors to order during the Pandemic. Cultivate employees take grocery orders and a cadre of volunteers go to shop and then deliver the groceries seniors. Cultivate partnered with King Soopers to set aside grocery items that seniors tend to run out of. Cultivate also provides medical transport to senior veterans. Cultivate does not operate just in Boulder County, but all over the general area. Cultivate also assists spouses, widows, and dependent children with transportation as well. Cultivate has over 800 volunteers each year. There are no qualification requirements except those volunteers are at least 60 years old and live in Broomfield or Boulder Counties. Needs look different for each senior. The oldest served senior is 99 years old. Seniors can be signed up for services on Cultivate@mgo or by phone. There is a lot of outreaches from organizations like the Broomfield Veterans Museum, the VFW, and the VA. Also, there is some computer tech support available to seniors as well. This is at a basic level where the provider can be trusted. Question becomes who can you trust to let into your personal accounts if you are a senior? Cultivate does have great partners for more complicated services. They provide recommendations and help navigate seniors to a trusted source of tech help. Seniors often have monetary shortages. Cultivate helps provide free services that the seniors would otherwise have to pay for. In addition, volunteers are trained to watch for abnormal credit card and cash usages such as inconsistent grocery and other purchases. Our club thanks Chrysti for her informative presentation about Cultivate and the valuable services the organization provides to seniors.

5/24/21-Brandon McMahon, Community Relations Director, Flatirons Habitat for Humanity

Brandon joined Habitat for Humanity after 18 years in the military. Broomfield Housing Opportunity Establishment began in 1976. Since 1993 the Flatirons branch has built or rehabilitated 100 homes. There are 25 Habitat affiliates across Colorado that have helped over 3,000 families. Teams have also been deployed to several countries. Cambodia is a scheduled country in 2022. Homeowners should not have to



spend over 30% of their income on housing. There is an effort to expand the number of homes built each year. Families must have 25 – 80% AMI of \$115, 000. They also must put in at least 200 hours of sweat equity into their own homes. In addition, potential owners must complete classes on financial planning. They must make payments on low interest HOA loans through the FHFA. Homes are a hand up not a handout. Habitat also does some rentals for people to live while their home is being built. Homes are 1,100 square feet. Each home has three bedrooms, 1.5 baths, a living and kitchen area. Construction standards must meet or exceed standards of the area. Currently Habitat is building 19 units in Palo Parkway and 10 units in Gunbarrel. In the future, 72 units are being planned for Ponderosa, and 12 units are planned for Discovery Church. Ponderosa is a revitalization project in an older trailer park. Future owners can use their trailer as a down payment on a new affordable home or keep their trailer if they desire. Habitat partners with Hope Lutheran Church to build a facility for emancipated foster youth. Acquiring land is the most difficult part of building single family homes. There are eight houses and 35 rental units being planned in the Cottonwood area. Habitat is also restoring 25 existing houses around the state. The organization is always looking for volunteers, advocates, and financial contributors. No construction experience necessary for volunteers. NIMBY stands for Not In My Back Yard. The organization sponsors community events to discuss affordable housing and counteract the bad rap. Boulder has a goal of 18% affordable housing and is currently at 7%. Broomfield's goals are considerably less. Habitat hopes to increase advocacy in Broomfield. Contact Brandon at bmcMahon@flatironshabitat.org and his cell 651-468-6752. Our club thanks Brandon for informing us about the important work of Habitat for Humanity.