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family members who operate a fourth generation corn, soybean, and hog farm has helped me understand the importance of economic accessibility in a transition to sustainable practices. Similar to other small-scale producers throughout the region experiencing heightened economic challenges, their central motive is to secure profit and remain competitive. While they do not wish to deplete the soil or impart chemicals into water systems, they must do so in order to maintain their livelihood. In light of these economic challenges, “doing the right thing” for the environment must become an attractive choice, not only because of its benefits in climate change mitigation but because of its competitive advantage. It is with this understanding of conventional food production systems and the rural farming experience that I enter a career in sustainable agriculture and environmental policy. With strong educational backing and an understanding of the rural farming experience, I believe I can serve as an effective advocate for change by approaching policy and decision making with people like my own relatives in mind. Mr. Miller will be a senior at Gustavus Adolphus this fall.

**We wish him and all the applicants Success.**

**All of you give us hope for the future.**

**We wish we could award more scholarships.** We had ten applicants. All passionate, motivated and with great potentials. We are financially limited to providing just one scholarship. Our long term goal (and dream) is to build the scholarship endowment to a point where we can award more scholarships—in perpetuity. Your contributions help fulfill these goals.

Previous recipients have gone on to careers in soil and forestry research, and working internationally in advancing sustainable practices. To date there have been 3 women and two men from Rice, Goodhue, Wabasha, Olmsted, and Winona Counties who received the scholarship. They study/studied at U of Minnesota, UW Madison, UW River Falls and now Gustavus Adolphus. We did have one year with no qualified candidates.

**The purpose of this scholarship** is to provide financial aid to individuals growing up in southeast Minnesota who are committed to sustainability in the fields of agriculture and forestry, have demonstrated leadership and communication skills, and are interested in pursuing a career in fields related to and advancing practices of sustainable agriculture and/or forestry. Sustainable practices ensure clean water, healthy regenerative soils, and vibrant rural communities for future generations.

The scholarship fund seeks to find the next generation of professionals who will learn how to manage our environment on a completely sustainable basis, provide food, fiber and shelter for people, and in the process protect our precious natural resources for our children and those yet to come.

**If you too** are concerned about the indiscriminate use of chemicals which are killing our pollinators, polluting our water, and negatively effecting our food supply, then JOIN US by donating today.

Contributions to the Fund are fully tax deductible.

#### Methods of contributions are numerous:

- ★ A check or credit card is wonderful.
- ★ Matching funds from employer.
- ★ Direct transfers from an IRA.<sup>1</sup>
- ★ Endowments through your Estate Plan, wills or life insurance policies.<sup>1</sup>

<sup>1)</sup> See website for method and be sure to contact your financial advisor, accountant or lawyer for advise.

The Scholarship Endowment Fund is structured such that only earnings from the invested capital are used to pay for scholarship(s) and Fund operating expenses. This rule assures that the Fund will operate in perpetuity. The Rochester Area Foundation (RAF) is the steward of the Fund. RAF's administrative fees are 1.25% of the annual fund balance and are amply covered by RAF's investment performance. Neither scholarships nor fees are reducing the endowment equity!

\* There is a cost for credit card donations.

#### Educational Resources

The Scholarship founders not only work on building the endowment funds. They also operate a website, mail this newsletter twice a year to interested individuals at no cost, and provide presentations—all to bring awareness to people in south east Minnesota about the need to think sustainably in order to protect our futures.

The following organizations have received the presentation “Healthy Soils—the Key to Our Survival:”

*Kiwanis of Lake City*  
*The Womans Club of Lake City*  
*The Lions Club of Lake City*  
*The Rotary of Lake City*  
*The Izaak Walton League of Wabasha (Wapahsa Ikes)*

As a result of the presentation, the Womans Club and the Wapasha Ikes also voted to donate to the endowment fund in addition to several member donations. Thank you.

#### Interested in an educational presentation about sustainable agriculture and forestry for your club?

—contact us. We have a ~30 minute presentation which is easily expanded with a question and answer session.



To access the website with all its references, current and past newsletters, scholarship information, donor list and more, use your smart phone to scan the QR code.

For more details and references related to articles in this newsletter, visit our website:

**www.protectourresources.org**



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endowment  
fund!\*

Issue 11

# Sustain US

May 2020

By Protecting Our Resources

The Sustainable Agriculture & Forestry Scholarship Endowment Fund Newsletter

Always  
leave  
the soil  
better  
than you  
found it

## Introducing the 2020 Scholarship recipient:

Mr James Miller

Nine reviewers met virtually on Tuesday May 5 to discuss ten scholarship applications. Mr. Miller stood out as the recommended candidate.



“Mono-  
cultures  
are a  
detriment  
to soil  
health.”  
—Gabe  
Brown,  
North  
Dakota  
farmer on  
10,000  
acres

## Here are excerpts from his application about his educational focus:

With undergraduate majors in both biology and geography, I approach sustainable agriculture from an interdisciplinary approach that emphasizes both scientific and social-scientific aspects

of environmental conservation. Understanding that conventional systems continue to deplete natural resource reserves and environmental quality, my coursework in biology and physical geography provides me with a deep understanding of agricultural ecosystems and the restorative effect that sustainable management techniques have on soil. Dual emphasis in human geography has helped me examine agriculture from an entirely different perspective, introducing

social and political elements into my analysis. While conventional agriculture is inherently unsustainable for the environment, changing the system will require policy that enhances both environmental quality and the economic viability of farming, especially for small-scale producers. My interdisciplinary education equips me to serve as a change agent in the field, allowing me to help build environmentally resilient agricultural systems that work for all people.

## From his Future Plans Essay:

I see myself working at the nexus of on-site natural resource management and agricultural policy, advocating for reform that increases the accessibility of sustainable agriculture to farmers. While support is required at all levels, I have a specific interest in working with small scale, rural producers who often lack the economic flexibility to transition to sustainable practices. Currently, the USDA states that 51% of the total value of agricultural production can be attributed to just 3.2% of US farms, indicating that the vast majority of farmers have significantly less power and economic stake in the industry. This stark division in the industry has an impact on my family, my neighbors, and other farmers struggling to stay afloat, and these personal connections motivate me to boost governmental incentivization for sustainable practices. It is time to prioritize rural farmers in policy discussions, and growing up with extended

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## News from the field

TPT television channel 2 has a sequence of programs addressing water and our dependence on it. Titled **H<sub>2</sub>O: The Molecule That Made Us**. Discover how water underpins every aspect of our existence. Find out how our success as humans is intimately connected to our control and respect of the molecule, but that the growth of our civilizations has also created a dangerous dependence on this precious resource. Watch the program on [www.tpt.org](http://www.tpt.org) and look for its title. If we don't start taking our right to clean water seriously we are doomed.

**The Zumbro River Watershed Restoration and Protection Strategies** project is undergoing a long range planning process “For Cleaner Water and Fewer Floods.” For information go to [www.zumbrowatershed.org/WRAPS](http://www.zumbrowatershed.org/WRAPS)

The multiple award winning documentary film, **Right to Harm—a Public Health Crisis Too Big To Ignore**, exposes the devastating public health impact factory farming has on many disadvantaged citizens throughout the United States. Filmed across the country, the documentary chronicles the failures of state agencies to regulate industrial animal agriculture. Known formally as Concentrated Animal Feeding Operations – or CAFOs – these facilities produce millions of gallons of untreated waste that destroys the quality of life for nearby neighbors. Fed up with the lack of regulation, these disenfranchised citizens band together to demand justice from their legislators. You can view the film on line. Go to [www.righttoharm.film](http://www.righttoharm.film)

**www.kernza.org** website provides good news about this perennial grain. Check it out.



# Industrial Practices

## Incur High Costs



**Corn on bare ground is subject to erosion, weeds, and insect problems**



### A Farmer Laments:

“Symptoms of our degraded resource included poor infiltration, poor fertility, compaction, weeds, low yields, high input costs, salinity, plant diseases, invasive pests, erosion, declining profits, and the list went on” said farmer Gabe Brown describing the farm he “inherited” after his fourth crop failure.

—Gabe Brown, *Dirt to Soil*, page 24

**Tilling and bare ground kills microbes that give soil its life. The result is lifeless dirt.**

# Letting Nature do Its Work

## Adds a Level of Financial Stability to Farming



**Inter seeding with multiple species cover crops suppresses weeds, holds water, eliminates need for herbicides, pesticides and fertilizers.**



### A Happy Farmer

“...results from our four years of split crop trials with and without synthetic fertilizers proved without a doubt that Dr. Kris Nichols was right. For four years in a row, the crop yields of the unfertilized half of the test field were equal to or greater than the fertilized half! I also noticed a dramatic improvement in the health of our soils once I removed synthetic fertilizer. The soil was much more aggregated which meant its water infiltration had improved significantly...we haven’t uses synthetic fertilizer on our owned land since.”

—Gabe Brown, *Dirt to Soil*, page 43

### Stories demonstrate the financial advantage

“Safeguarding Soil—A Smart Way to Protect Farmers, Taxpayers, and the Future of Our Food.”

“Can moving from traditional cropping systems to regenerative agriculture be profitable? I believe the answer to that question is a resounding yes.”

“Monetizing cover crops improves profitability for Iowa farmers.”

“MN farmers with environmental/conservation focused practices experienced higher average and median net farm incomes than “conventional practitioners.”

“Rotating Crops, Turning Profits How Diversified Farming Systems Can Help Farmers While Protecting Soil and Preventing Pollution”

“We Achieve Gross income of \$100,000 per acre per year—on three acres.”

Links to each story is available on the web site.

### How did this happen?

In the middle 1930s, farmers were paid to plant sweet clover in with their grain crops. Overproduction became a national problem and the government penalized farmers for cover cropping. After world war II, agrochemical companies came along further pushing cover crops and intercropping out of favor.” (Acres Magazine, pg 16, September 2019)

Anneliese Abbott, a soil scientist, researching sustainable agriculture and agricultural history observes that “... somewhere between 1950 and 1953, something dramatically changed in American agriculture. Interest in soil conservation and permanent agriculture declined sharply; soil-conserving pasture and hay fields were plowed up to plant corn and soybeans; ecologists were no longer interested in agriculture; and organic farmers were ridiculed as “cranks” and “faddists.”

She writes further that this is a very complicated topic but that it all started “with a gradual abandonment of conservation practices.” From Acres January 2020 article: The Great Divide. The Decline of Ecological Agriculture in Postwar America

### New Policies Needed

Soil is at the foundation of our food system and is vital for our future. Healthy, living soil promotes healthy crops, holds water, prevents pollution, stores carbon, and helps ensure that farmers and their communities can thrive. Yet decades of short-sighted farm policies have incentivized practices—such as growing just one or two crops instead of more diverse rotations, and leaving soil bare after harvests—that have depleted and damaged this foundation. As a result, estimates have suggested that US farms lose more than 3 trillion

pounds of soil to erosion each year. To rebuild this critical life-support system, we need science-based public policies that invest in farmers and soil. From: <https://www.ucsusa.org/sites/default/files/2019-12/safeguarding-soil-policy-brief-2019-web-final.pdf>

**We Need Science-Based Public Policies That Invest in Farmers and Soil**

This is a clump of dirt. It has no life, no microbes, and no pores to hold water and air.



**it is the pore space that counts**

hold. Soil Organic Matter (SOM) and soil water capture/holding capacity are directly related. 1% SOM—typical of today's row crop farms—infiltrate water very slowly. Increasing SOM increases infiltration rate. One farmer experience a poorest rate of 6.5 inches per hour. His best is 12 inches per hour. His SOM is high.

## Healthy Soil—Improves Farm Profitability

Cover crops provide a wide range of benefits including, improved soil infiltration, reduced erosion, increased soil organic matter, enhanced soil biology, and improved habitat for wildlife.

### Soil Health Principles:

Soil health is the capacity of a soil to function as a vital, living ecosystem that sustains plants, animals, and humans. It is achieved when we...

- ✓ **Minimize disturbance**
- ✓ **Maximize soil cover**
- ✓ **Maximize bio diversity**
- ✓ **Maximize living roots**
- ✓ **Integrate livestock**

Research shows that by managing for soil health, growers can boost yield, decrease input costs, and improve profit, while conserving soil and boosting water quality. —Midwest Conservation and Stewardship Manager with the American Farmland Trust.

**Organic Regenerative Farming** is an approach to food and farming systems that rejects pesticides, artificial fertilizers and aims to regenerate topsoil, increase biodiversity, improve water cycles, enhance ecosystem services, increase resilience to climate fluctuation and strengthen the health and vitality of farming.

—<https://en.wikipedia.org/>

Regenerative practices are those that leverage the capacity of healthy soil to renew itself.

The goal is to feed the soil so it will feed the plants with the full complement of micro and macro nutrients.