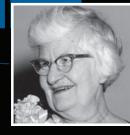


# WOMEN IN DEEP FOUNDATIONS OUT OF THE PROPERTY OF THE PROPERTY

























2024 CALENDAR



The first woman in Europe to have earned a civil engineering degree.

Alice Jacqueline Perry 1885 – 1969

Alice Perry graduated with honors from Queens College, Galway, Ireland, in 1906, with a bachelor's degree in engineering. When Perry's father died, she stepped into his role as surveyor inspecting and recommending repairs for bridges, roads and docks. Perry garnered accolades for her "outstanding ability" but was passed over as her father's permanent replacement. Instead, Perry became a government safety inspector where she enforced new, toughened standards for occupational health and safety. In 2017, the University of Galway renamed its engineering building in Perry's honor.

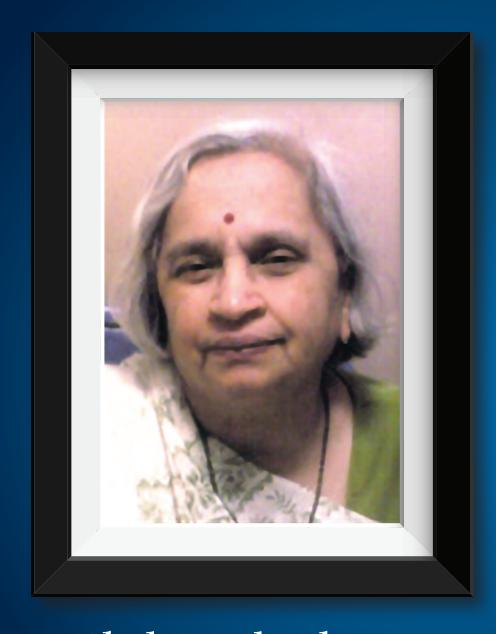
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
December           Sun Mon Tue Wed Thu         Frl         Sat           1         2           3         4         5         6         7         8         9           10         11         12         13         14         15         16           17         18         19         20         21         22         23           24         25         26         27         28         29         30           31	1	2	3	4	5	6
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14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			February  Sun Mon Tue Wed Thu Fri Sat  1 2 3  4 5 6 7 8 9 10  11 12 13 14 15 16 17  18 19 20 21 22 23 24  25 26 27 28 29



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"It never bothered me that I was the only girl in the classroom."

Shakuntala Bhagat 1933 - 2012

Shakuntala Bhagat became the first woman to earn a civil engineering degree at Veermata Jijabai Technological Institute in Mumbai, India, in 1953. She then earned a master's degree in civil and structural engineering at the University of Pennsylvania. In 1972, Bhagat received the highest award from the Invention Promotion Board for Unishear Connectors and in 1993 was given the "Woman Engineer of the Year" award.

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY			
January       Sun Mon Tue Wed Thu Fri Sat       1     2     3     4     5     6       7     8     9     10     11     12     13       14     15     16     17     18     19     20       21     22     23     24     25     26     27       28     29     30     31				1	2	3			
4	5	6	7	8	9	10			
11	12	13	14	15	16	17			
18	19	20	21	22	23	24			
	NATIONAL ENGINEERS WEEK								
25	26	27	28	29		March  Sun Mon Tue Wed Thu Fri Sat  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31			

### FEBRUARY 2024



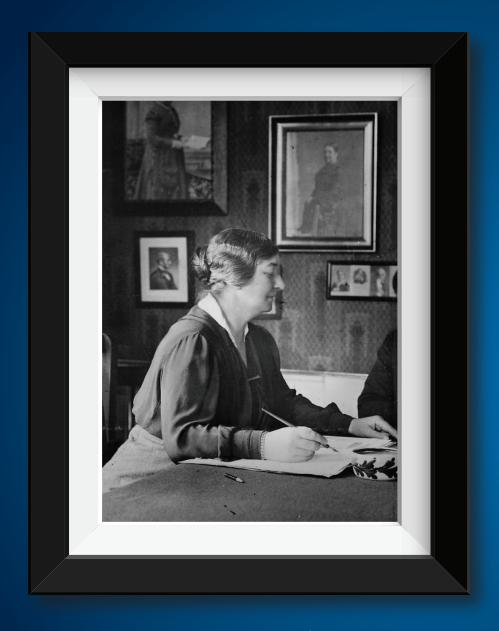
The first woman to receive a civil engineering degree from the University of Colorado at Boulder in 1920.

Elsie Eaves 1898 – 1983 Elsie Eaves was the first woman to be elected associate member, member, fellow and life member of the American Society of Civil Engineers. In 1929, Eaves compiled the first national inventory of municipal and industrial sewage disposal facilities. Eaves was a professional engineer in New York and a founder of the Society of Women Engineers. Eaves was also on the editorial staff of *Engineering News Record* for 37 years.

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
February           Sun Mon Tue         Wed Thu Fri Value         Sat           1         2         3           4         5         6         7         8         9         10           11         12         13         14         15         16         17           18         19         20         21         22         23         24           25         26         27         28         29			April Sun Mon Tue Wed Thu Fri Sat  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30		1	2
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24 31	25	26	27	28	29	30







The first woman in Denmark to become a factory engineer.

Julie Arenholt 1873 – 1952

Julie Arenholt was a Danish civil engineer, women's rights campaigner and politician. In 1910, she was the first woman in Denmark to become a factory engineer, inspecting bakeries in Copenhagen until her retirement in 1939. From 1918 until 1921, she served as president of the Danish Women's Society. Arenholt was also active on the international stage, speaking at conferences and serving on the International Alliance of Women's Central Committee (1923–1929).

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
March       Sun Mon Tue Wed Thu Fri Sat       1     2       3     4     5     6     7     8     9       10     11     12     13     14     15     16       17     18     19     20     21     22     23       24     25     26     27     28     29     30       31	1	2	3	4	5	6
7	8	9	10	International Seminar on Successes and Failures Copenhagen, Denmark	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				May       Sun Mon Tue Wed Thu Fri Sat       1     2     3     4       5     6     7     8     9     10     11       12     13     14     15     16     17     18       19     20     21     22     23     24     25       26     27     28     29     30     31





Lelia Thompson Flagg
1939

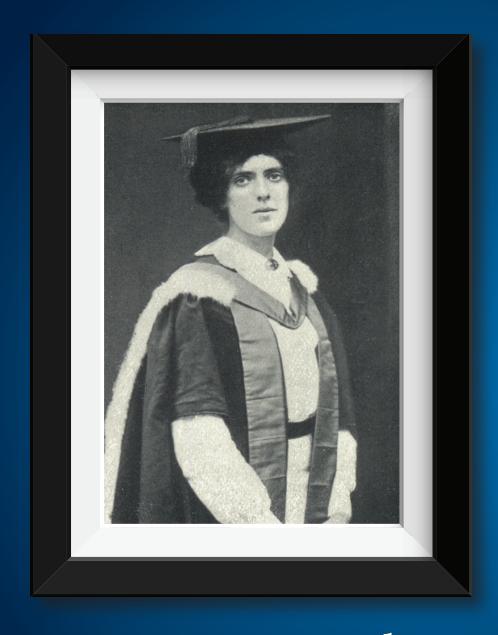
The first African American to graduate with a bachelor's of science in civil engineering from the Missouri School of Mines (MSM) in 1960 currently known as Missouri University of Science and Technology.

Lelia Flagg excelled at math and was encouraged early on by teachers to study engineering. In 1956, just two years after the ruling on Brown v. Board of Education, Flagg was accepted to MSM. Despite acceptance to the school, Flagg was without campus housing as there were no female dorms. She found a home with an active member of the Elkins Methodist Church, who became like family. After graduation, Flagg worked at the Bureau of Sanitary Engineering in California. She then went on to receive her master's degree from University of California, Berkeley, worked for the California Department of Water Resources and earned her P.E. certification.

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
April    Sun Mon Tue Wed Thu Fri Sat			1	2	3	4
5	6	SAVE	THE DATE IFC	MAY 7-10	, 2024	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	Hosted by:	2 <sup>nd</sup> annual Conference Decarbonizat  MAY 28-30, 2024   KIT AMST	tion and Re-use	31	June       Sun Mon Tue Wed Thu Fri Sat       1     1       2     3     4     5     6     7     8       9     10     11     12     13     14     15       16     17     18     19     20     21     22       23     24     25     26     27     28     29       30





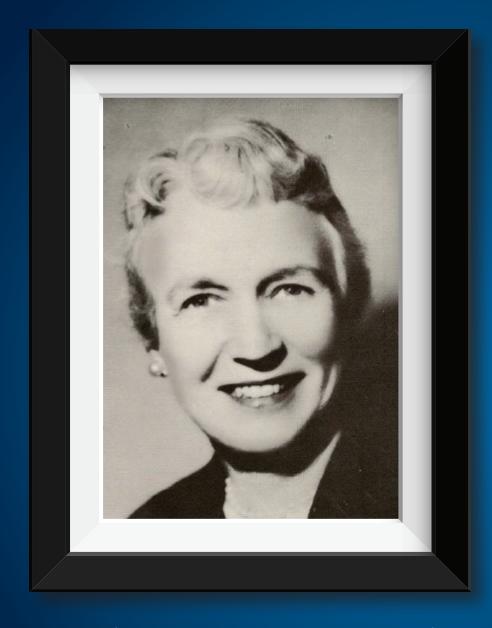


The first woman to receive an engineering degree in Britain.

Nina Cameron Graham 1891 – 1974

Nina Cameron Graham received her engineering degree from the University of Liverpool in 1912. Later, the university created an award in her name, the Nina Cameron Graham prize, awarded to the highest-ranking female student in the Bachelor of Civil Engineering school. Although she did not practice professionally as an engineer, she assisted her husband who was also a civil engineer. On their honeymoon, they surveyed for dam construction in Qu'Appelle Valley in Saskatchewan, Canada.

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
May           Sun Mon Tue         Wed Thu         Fri         Sat           1         2         3         4           5         6         7         8         9         10         11           12         13         14         15         16         17         18           19         20         21         22         23         24         25           26         27         28         29         30         31				July       Sun Mon Tue Wed Thu Fri Sat       1     2     3     4     5     6       7     8     9     10     11     12     13       14     15     16     17     18     19     20       21     22     23     24     25     26     27       28     29     30     31		1
2	3	4	5	6	7	8
9	10	11	June 12-14, 20	Piling Design & Construction San Franci	In partnership with  ABSC  Conference sco, California  arriott Marquis	15
16	17	18	19	20	21	22
23 International Women in Engineering Day 30	24	25	26	27	28	29



Ruth Doggett Terzaghi 1903 – 1992

Terzaghi became the first woman elected both to the Geological Society of America and to the highest level, Honorary Membership, of the Association of Engineering Geologists.

Ruth Doggett Terzaghi received a master's in geology from the University of Chicago in 1925. During her Harvard studies, where she earned a doctorate degree in geology, she met Professor Karl Terzaghi of Massachusetts Institute of Technology (MIT), who she married. He respected her technical judgment so much that he delegated the investigation of concrete deterioration at a Virginia shipyard in the 1940s to her. Ruth traced the problem to a build-up of carbonic acid and recommended repairs that fully corrected the problem. Her technical acumen won her the 1950 Clemens Herschel Prize from the Boston Society of Civil Engineers.

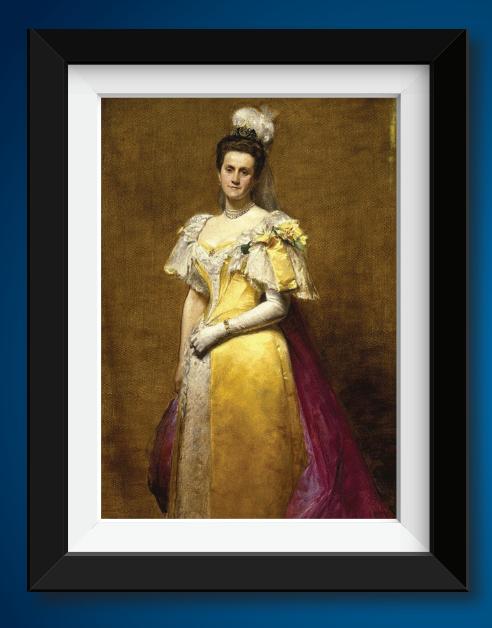
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
June       Sun Mon Tue Wed Thu Fri Sat       1     1       2     3     4     5     6     7     8       9     10     11     12     13     14     15       16     17     18     19     20     21     22       23     24     25     26     27     28     29       30	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	Pennsylvania Golf Outing Mountour Heights Country Club	23	24	25	26	27
28	29	30	31			August       Sun Mon Tue Wed Thu Fri Sat       1     2     3       4     5     6     7     8     9     10       11     12     13     14     15     16     17       18     19     20     21     22     23     24       25     26     27     28     29     30     31



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Emily Warren Roebling 1843 – 1903

"By and by it was common gossip that hers was the great mind behind the great work and that this, the most monumental engineering triumph of the age, was actually the doing of a woman, which as a general proposition was taken in some quarters to be both preposterous and calamitous. In truth, she had by then a thorough grasp of the engineering involved."

> ~David McCullough, author of The Great Bridge: The Epic Story of the Building of the Brooklyn Bridge

Emily Warren Roebling studied mathematics and science and was a self-taught engineer, learning from books and while working with her husband who was also an engineer. She continued his work on the Brooklyn Bridge when he became bedbound due to illness. Roebling completed many of the duties of the chief engineer, including project management and daily construction supervision.

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
July       Sun Mon Tue Wed Thu Fri Sat       1     2     3     4     5     6       7     8     9     10     11     12     13       14     15     16     17     18     19     20       21     22     23     24     25     26     27       28     29     30     31			September       Sun Mon Tue Wed Thu Fri Sat       1     2     3     4     5     6     7       8     9     10     11     12     13     14       15     16     17     18     19     20     21       22     23     24     25     26     27     28       29     30	1	2	3
4	5	DEEP COLONS WATHER STATES	Slop and August 6-8, 202	es, Support Stabilization 24   Aurora, Colorado	9	10
11	12	13	14	15	16	17
18	New Jersey Golf Outing Lake Mohawk Golf Club	20	21	22	23	24
25	26	27	28	29	30	31

## AUGUST 2024



A serial inventor almost on par with Thomas Edison,
Guppy is best known for her contributions to bridge building.

Sarah Guppy 1770 – 1852 Sarah Guppy's first patent was for a way of making safe piling for the foundations of bridges, and her work helped support the famous Clifton suspension bridge in Bristol, England. Guppy was prolific — other patents included methods of keeping ships free of barnacles, a bed with built-in exercise equipment, and a tea and coffee urn that would cook eggs and keep toast warm.

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	California Golf Outing Dublin Ranch Golf Course	21
22	23	24	25	26	27	28
29	30		August       Sun Mon Tue Wed Thu Fri Sat       1     2     3       4     5     6     7     8     9     10       11     12     13     14     15     16     17       18     19     20     21     22     23     24       25     26     27     28     29     30     31			October           Sun Mon Tue Wed Thu         Fri         Sat           1         2         3         4         5           6         7         8         9         10         11         12           13         14         15         16         17         18         19           20         21         22         23         24         25         26           27         28         29         30         31







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Alda Wilson 1873 – 1960

"A girl must take into account that, as yet, she is a pioneer in the profession, which implies more or less opposition, not on account of her intellectual or physical limitations but of artificial conventions, the remnants of a past condition of society. Working with men who will take each other at face value, she will need to produce proofs of capability at every step."

-Alda H. and Elmina Wilson. The Arrow of Pi Beta Phi. "Architecture as a profession for women." Jan. 1919. Vol 39(2). Special Collections at Iowa State University. Alda Wilson completed a bachelor's in civil engineering in 1894 from Iowa State University. She also pursued her graduate studies at the Massachusetts Institute of Technology (MIT) from 1897 to 1898. Wilson was the head of the first women's drafting department of the Highway Commission, now the Iowa Department of Transportation, and was named the superintendent of construction for the Cranford Apartments built in 1922.

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
September       Sun Mon Tue Wed Thu Fri Sat       1     2     3     4     5     6     7       8     9     10     11     12     13     14       15     16     17     18     19     20     21       22     23     24     25     26     27     28       29     30		1	2	3	4	5
6	DEEP SOLUTIONS 125		nual Conference on Deep D Deep 7 - 10, 2024   Auro	149	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		November  Sun Mon Tue Wed Thu Fri Sat  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30



Elmina Wilson received the first master's in civil engineering degree awarded to any woman from an American university.

Elmina Wilson 1870 – 1918

Elmina Wilson received a bachelor's degree in civil engineering in 1892 from Iowa State University and then a master's degree in 1894. She later also earned a degree in civil engineering from the Massachusetts Institute of Technology (MIT). In 1895, she worked with Anson Marston to design the first elevated steel water tower west of Mississippi - Marston Water Tower. She was the nation's first full-time female professor in civil engineering.

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
October           Sun Mon Tue Wed Thu Fri Sat           1         2         3         4         5           6         7         8         9         10         11         12           13         14         15         16         17         18         19           20         21         22         23         24         25         26           27         28         29         30         31			December           Sun Mon Tue Wed Thu         Fri         Sat           1         2         3         4         5         6         7           8         9         10         11         12         13         14           15         16         17         18         19         20         21           22         23         24         25         26         27         28           29         30         31		1	2
3	TENTATIVE  17th Annual Gala Fundraising Dinner	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30







Barney was Cornell
University's first
female engineering
graduate.

Nora Stanton Barney 1883 – 1971

In 1905, in addition to graduating from Cornell, Nora Stanton Barney was admitted as a junior member of the American Society of Civil Engineers (ASCE) but was denied advancement to associate member in 1916 solely because of her gender. She sued the society because she met all the membership requirements. Barney worked for the New York City Board of Water Supply and the American Bridge Company. In 2015, Barney was posthumously advanced to ASCE fellow status.

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1	2	3	4	5	6	7
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29	30	31		November  Sun Mon Tue Wed Thu Fri Sat  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30		January       Sun Mon     Tue     Wed     Thu     Fri     Sat       1     2     3     4       5     6     7     8     9     10     11       12     13     14     15     16     17     18       19     20     21     22     23     24     25       26     27     28     29     30     31



# ABOUT THE WOMEN IN DEEP FOUNDATIONS (WiDF) COMMITTEE

The WiDF Committee was established in 2014, comprising both of women and men representing all industry stakeholders, to support women working in any capacity in the foundation industry. Since issues that affect women in the industry affect other minority or underrepresented participants, the committee welcomes and enjoys a diverse membership. The essential involvement of male committee members fosters understanding and awareness and sharing of experiences to effect real and broad industry change.

#### Mission

To enhance professional development opportunities for women in the deep foundations industry.

The WiDF program creates networking, mentoring and professional development programs that support career readiness and growth and raise awareness of career opportunities in geotechnical engineering and deep foundations design and construction.



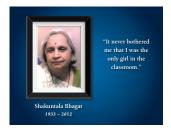
### Photograph Original Sources

- 1. January Alice Perry; Photo from http://www.realizedvision.com/ap.php
- 2. February Shakuntala Bhagat; Photo from https://www.projectsmonitor.com/pathfinders/shakuntala-a-bhagat-first-woman-civilengineer-bridge-superstructure/
- 3. March Elsie Eaves; Photo from https://www.mulheresnaengenharia.com/2017/03/elsie-eaves-engenheira-civil.html
- 4. April Julie Arenholt; Photo from https://commons.wikimedia.org/wiki/File:Julie\_Arentholt\_and\_Gyrithe\_Lemche\_in\_1922.jpg
- 5. May Lelia Thompson Flagg; Photo from https://discover.mst.edu/2012/01/31/lelia\_thompson\_flagg\_breaking\_barriers/
- 6. June Nina Cameron Graham; Photo from https://commons.wikimedia.org/wiki/File:Portrait\_from\_Tripota\_website.jpg
- 7. July Ruth Doggett Terzaghi; Photo from https://scholarsmine.mst.edu/cgi/viewcontent.cgi?referer=&httpsredir=1&article=3257&context=icchge
- 8. August Emily Warren Roebling; Photo from https://en.wikipedia.org/wiki/File:Brooklyn\_Museum\_-\_Portrait\_of\_Emily\_Warren\_ Roebling\_-\_Charles-%C3%89mile-Auguste\_Carolus-Duran.jpg#/media/File:Brooklyn\_Museum\_-\_Portrait\_of\_Emily\_Warren\_ Roebling\_-\_Charles-%C3%89mile-Auguste\_Carolus-Duran.jpg
- 9. September Sarah Guppy; Photo from https://en.wikipedia.org/wiki/Sarah\_Guppy#/media/File:Sarah\_Guppy.jpg
- 10. October Alda Wilson; Photo from https://commons.wikimedia.org/wiki/File:Alda\_H.\_Wilson\_retouch.jpg
- 11. November Elmina Wilson; Photo from https://www.ccee.iastate.edu/alumni-friends-industry-partners/hall-of-fame/elmina-wilson-2/
- 12. December Nora Barney; Photo from https://commons.wikimedia.org/wiki/File:Nora\_Stanton\_Blatch\_Barney\_1921.jpg

### ABOUT THE WIDF CALENDAR

The WiDF Committee is dedicated to honoring and remembering the women who have significantly impacted the field of civil engineering. The accomplishments and successes of these female engineers who have influenced history and the world are highlighted in this calendar. The WiDF committee will use the proceeds from the sale of this calendar to inspire more women to pursue civil engineering

degrees and consequently continue to have a positive impact on the global society and industry.\*













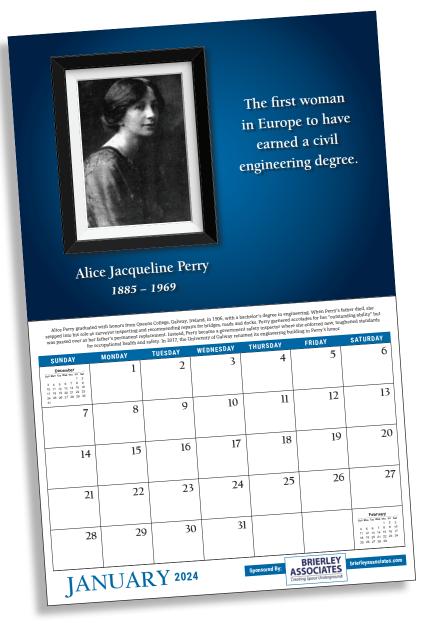












\* All proceeds will be given to the WiDF Fund of the DFI Educational Trust, a 501 (c)(3) nonprofit organization and DFI's charitable arm. Your contribution is tax-deductible to the extent permitted by law.