

# Whitney

horsepower mechanism, a life-preserver, a cheese press, a revolving rifle – and a heart pump.

In 1849, Porter even designed an 800-foot steam-powered airship to transport a hundred miners to the California Gold Rush, but his 240-foot-long “aeropot” prototype was destroyed by a tornado, while two other attempts never came to fruition.

Porter brought art and science together in two publications – A Select Collection of Valuable And Curious Arts and Interesting Experiments, and later New York Mechanic. In 1845 Porter founded and published Scientific American, but sold it 10 months later. Porter defied conventional boundaries because he open to new ideas and not afraid of what he did not know. Today you can visit the Rufus Porter Museum in Bridgeton, Maine.

The Wright brothers, self-taught entrepreneurs who never graduated high school, built their own bicycle business while pursuing their dream – to build a flying machine. In 1903, Orville and Wilbur Wright successfully tested a flying machine that took off on its own power, flew at even speeds and landed safely without damage – and started the era of human flight. While the competition focused on vertical lift, balloons and airships, the Wright brothers saw the problem differently – in terms of balance and “driving” the wind like riding a bicycle.

Violinmaker Carleen Hutchins, a Cornell biologist, teacher and pregnant housewife – the subject of my biography American Luthier (ForeEdge, 2016) – carved her first viola as a hobby, just to see if she could do it.

The same year she apprenticed to a master violinmaker, she met retired Harvard physicist Frederick Saunders and offered to make violas to be used in experiments. Eventually, Hutchins merged acoustical physics with violinmaking, made a more resonant violin and invented the violin octet – eight hand-carved violins of graduated sizes and tunings spanning the range of a piano, from an 11” treble violin to a 7-foot contrabass. Hutchins

wrote 100 technical papers about violin acoustics and made nearly 500 stringed instruments.

A trumpet player and biologist, Hutchins left behind what she knew to enter two worlds she knew nothing about, teaching herself acoustical physics by carving fiddles in her kitchen. Like Porter and the Wright brothers, Hutchins was fearless about what she did not know.

But unlike Porter and the Wright brothers, Hutchins struggled mightily. She discovered she had inadvertently created a firestorm in the violin world that had remained unchanged for four centuries, ever since the first known violin made by Andreas Amati in 1555.

Close-minded luthiers hated Hutchins for bringing science into the workshop – why bother with acoustics? String players saw a new violin family as problematic. Why improve the violin? Wasn't the quartet already perfect? What violist wants to play a “vertical viola”?

Teachers hated the violin octet because it might require them to learn new pedagogy. (Hutchins was invited to speak at Juilliard three times but was uninvited before she got there.)

Dealers hated Hutchins most of all. By improving the acoustics of mediocre violins, and inventing a new more resonant violin, she was fooling with centuries-old mythology about old fiddles being better than new ones and tipping the balance of the elitist high-priced violin market.

To add fuel to the fire, Hutchins was a female in three male-dominated fields – violinmaking, acoustical physics, and classical music. Though she contributed more to her field than any luthier since Stradivari, Hutchins was blackballed by many of her peers.

Nevertheless, some open-minded musicians, conductors and physicists all worked to promote the violin octet in England, Wales, Scotland, Sweden, Russia, and Iceland – but all of these efforts proved ineffective because players could not get past their own assumptions.

One glorious exception is the Hutchins Consort, of San Diego, CA, the only professional ensemble in the world that performs on a Hutchins violin octet. In 1999, McNalley, propelled by his own contagious enthusiasm, found musicians

driven by openness and curiosity rather than prejudice. Today the Hutchins Consort performs a wide repertoire from medieval and Renaissance to classical and jazz. This powerful ensemble has to be heard live to be believed.

What do Rufus Porter, the Wright Brothers, Carleen Hutchins, and Joe McNalley have in common? They built bridges instead of walls and understood that openness breeds opportunity. What's more, they each connect in surprising ways across time and space.

Rufus Porter and Carleen Hutchins. If not for the 1962 Scientific American cover article by Hutchins entitled “The Physics of Violins” that made her an international figure in her field, she would have been forever lost to obscurity.

Carleen Hutchins and Joe McNalley. Without one bass player with a dream, no one in America would know of Hutchins or her violin octet.

Joe McNally and Rufus Porter. McNalley survived a surprise quintuple by-pass a year ago. McNalley owes his life to the Porter-Bradley heart pump, patented by Rufus Porter in 1855.

Now for the rest of the story. When my cousin came to visit from Georgia this past summer, she visited Bridgeton, Maine and the Rufus Porter Museum. Upon learning of his legacy, she passed a copy of American Luthier to the program director who was so taken with the parallels between Hutchins and Porter, she decided to create a summer-long exhibit on Hutchins at the Museum, and then invited me to do an author talk and the Hutchins Consort to come east.

All these points of light come together in a laser beam – this summer in Bridgeton, Maine. First, the Rufus Porter Museum will host a summer-long exhibition about Hutchins. On July 18, the Hutchins Consort will accompany my author talk at The Hayloft at Dragonfly Barn in Bridgeton. Two days later, on July 20, the Hutchins Consort will give a concert.

Openness breeds opportunity in surprising ways!

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