

CT Scanner Prototype at UCSF Medical Center 1976

X-Ray Machines, CT Scanners, MRIs: The Pivotal Role of the GE Research and Development Center

by Walter L. Robb

Early Years

In 1895, Professor Wilhelm Conrad Röntgen in Germany announced to the world that he had invented a method for generating x-ray beams. To demonstrate the use of these beams to produce human structure, he showed the x-ray image of his wife's hand.

Laboratories all over the world duplicated his experiment, including Edison's lab in Menlo Park, New Jersey. For 15 years there were incremental improvements in Roentgen's device, sufficient to obtain images of broken bones in any part of the body.

In the summer of 1896, a young MIT graduate named William Coolidge also produced x-rays using an electrostatic voltage generator, and he reportedly sold it to a local doctor. A few years later in 1900, he was one of the first scientists hired by Dr. Willis Whitney, as he began staffing the newly-formed GE Research Laboratory in Schenectady.

For the next seven years, it is not known if Coolidge ever thought about x-rays, but what he accomplished was to learn how to produce a tough ductile tungsten thread that was perfect for replacing the carbon fiber in Edison's light bulbs. With that invention going into production, Dr. Coolidge turned his attention to x-ray tubes, which were still similar to what Röntgen had invented: filled with inert gas, unstable, and limited in the energy of x-rays they could produce.

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President's Letter



possible. Thanks, Team!

This past year was very productive and exciting for us. We have had two Eagle Scout projects: the roofing, repairing and painting of our milk shed at the farm, and the building of a kiosk and bench along the Win Bigelow Nature Trail. Thank you and congratulations to Eagle Scouts Eric Tomlinson and Kyle Jerreld! The Nature Trail also received some new signs identifying natural sights of interest along the trail from The Environmental Clearinghouse of Schenectady (ECOS). More to enjoy when you take a spring walk after the snow melts! Additionally, the landscape has changed with the removal of overgrowth and trees, so that the river is now visible through the new fence built by John Ackner, Dale Wade-Keszey, with help from Jim Eignor, Steve Jones and Kyle Ostrander.

We have also finished the initial envisioning stage of the Interpretation plan for the Mabee Farm, moving it to our curators' imaginations and hands for the design plan, with implementation beginning this spring. Along the way we will be working on the physical buildings and the grounds to make sure that they are in the best condition possible. In order for our curators to concentrate on this and other planned programs and exhibits, the Mabee Farm will be closed during the week from January through March. Visitors are welcome to call and make an appointment to visit during the week, so don't hesitate to call to set up a time to visit. And we will still be open to the public on Saturdays from 10:00 A.M. to 4:00 P.M., so come out and see the "Changing Waters: the Story of the Mohawk River" at the Mabee Farm.

Our newest exhibit, "Together Until the End: Schenectady in World War One" opens at 32 Washington Avenue in January, so don't miss that, weekdays, 9-5 P.M. and Saturday, 10-2 P.M.

Marianne



Moving? Snowbird? Don't Miss An Issue Of Our Newsletter!

Please contact Mary Treanor at 518-374-0263 Ext 5 or
office@schenectadyhistorical.org to update your address.

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New Materials in the Library

DOCUMENTS AND PHOTOGRAPHS:

Nott Terrace Reunion Collection. **Gift of the Nott**

Terrace High School Class of 1950

Hank Caputo and the Schenectady Mohawks

Collection. **Gift of Toniann Boilard**

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Frank Sharpe Collection. **Gift of Paul Moore**

Glass Plate Negatives of Schenectady. **Gift of**

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BOOKS:

The Maska Dramatic Circle: Polish American Theater in Schenectady, New York (1933-1942).

Gift of Phyllis Zych Budka

The 18th New York Infantry in the Civil War.

Gift of Ryan Conklin

BLOG POSTS YOU MAY HAVE MISSED:

The Grems-Doolittle Library Collections Blog (<http://www.gremsdoolittlelibrary.blogspot.com/>) is a great resource for learning more about Schenectady County's rich history. Here are a few of the posts from the past couple months that you might have missed.

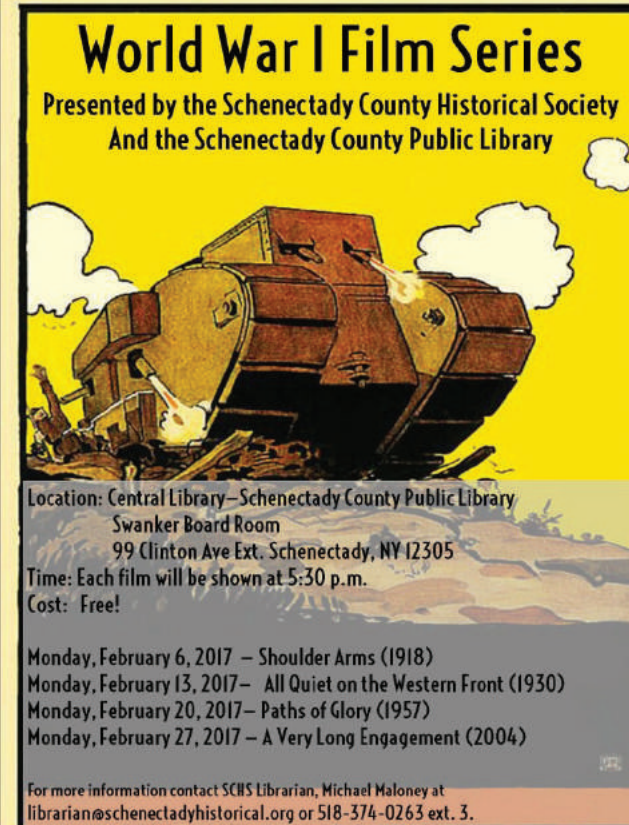
- ***Chester Arthur and the Birther Scandal of 1881 by librarian Mike Maloney – September, 23 2016***
What does our 21st and 44th president have in common? Both were accused of being born outside of the United States. Chester Arthur was first accused of being born in Ireland. When that proved to be untrue, his accusers claimed that Arthur was born in Canada.
- ***Schenectady's Fire of 1861 by library volunteer Diane Leone – October 21, 2016***
In 1861, Schenectady experienced its second major conflagration of the 19th century. The cause of the fire was unknown but it may have started at Otis Smith's broom factory on Washington Ave. It spread quickly from there, destroying many buildings in its path.
- ***Joseph "Pep" Cassillo and His Outdoor Boxing Ring in the East Front Street Neighborhood by Mary Ann Ruscitto – October 27, 2016***
Joseph "Pep" Cassillo grew up in the East Front Street neighborhood. Cassillo boxed, ran the Bucci Athletic Club, and eventually became a boxing promoter where he would hold boxing matches at the outdoor boxing arena on Erie Boulevard.

The Maska Dramatic Circle

Schenectadian Phyllis Zych Budka has written a new book on Polish American Theater in Schenectady, *The Maska Dramatic Circle: Polish American Theater in Schenectady, New York (1933 – 1942)*. Budka's parents, Stanley Jacob Zych and Sophie Victoria Korycinski Zych were both involved with The Maska Dramatic Circle. Her father, Stanley kept a scrapbook of his time in The Maska Dramatic Circle and Phyllis used the scrapbook as the basis for the book.

The Maska community was centered around Schenectady's Mont Pleasant neighborhood and their plays were held at the Polish National Alliance on Crane Street. The plays were in Polish and most were plays by Polish playwrights although they would sometimes adapt American plays and translate them into Polish. Three plays were written by Maska members. Phyllis translated these plays and excerpts are shown in her book.

The book is a combination of cultural and family history and is a great account of Polish-Americans in Schenectady. Phyllis' book is published through Moonrise Press and can be bought at lulu.com. Phyllis will also be speaking about her experience with publishing at the Schenectady County Historical Society on **February 18, 2017 at 2 pm**.



World War I Film Series
Presented by the Schenectady County Historical Society
And the Schenectady County Public Library

Location: Central Library—Schenectady County Public Library
Swanker Board Room
99 Clinton Ave Ext. Schenectady, NY 12305
Time: Each film will be shown at 5:30 p.m.
Cost: Free!

Monday, February 6, 2017 – Shoulder Arms (1918)
Monday, February 13, 2017 – All Quiet on the Western Front (1930)
Monday, February 20, 2017 – Paths of Glory (1957)
Monday, February 27, 2017 – A Very Long Engagement (2004)

For more information contact SCCHS Librarian, Michael Maloney at
librarian@schenectadyhistorical.org or 518-374-0263 ext. 3.

SCHENECTADY AND THE FIRST WORLD WAR: ON THE HOME FRONT

Although the carnage of World War I began in 1914, it wasn't until April 17, 1917 that America entered the war. Five months later, to the accompaniment of brass bands, church bells, and the cheers of flag-waving well-wishers, the first group of what eventually totaled 6,000 Schenectady soldiers departed from Union Station.



Preparation began long before the declaration of war. On June 26, 1916, according to the *Schenectady Gazette*, 20,000 marchers trooped up State Street in a "Preparedness Parade" observed by 80,000 spectators. This parade was part of the national "Preparedness Movement" started most notably by former President Theodore Roosevelt in 1915 to convince Americans of the need to prepare militarily for the inevitability of war and to join the British side. As part of this movement, a civilian training camp was established in Plattsburgh that twenty-five Union College students and faculty attended in the summer of 2016.

Also in 1916, the Army Surgeon General asked the Schenectady County Medical Society to examine potential draftees. The doctors pledged to provide treatments free of charge for the family of any man called into uniform. Later when the war started, nineteen physicians and six Ellis Hospital nurse volunteered to go overseas.

Even before war was declared, The National Guard (later incorporated into the 105th Regiment, 27th Infantry Division) was assigned to guard the New York Central Bridge over the Mohawk River and parts of the Champlain Barge Canal.

Two months after America entered the war, former President William Howard Taft, in a speech at the June commencement of Union College, expounded on the justification for going to war and warned of the inevitable sacrifices that our armed forces would have to make overseas.

There were also sacrifices to be made on the home front. Fearing a national coal shortage, Schenectadians observed "heatless Mondays." School board president Dr. Charles Steinmetz refused to close the schools,

including night school. He suggested that the theaters and saloons be closed instead. Mayor Charles Simon rode the streetcars on "gasless Mondays." Union College transformed what was later to become Bailey Field into a garden and made land near Nott Street available to the neighbors for growing vegetables. Schenectadians, like other Americans, got used to oleomargarine instead of butter.

Schenectadians worked overtime for the war effort, including Sundays and holidays. Five thousand ALCO workers built 100 steam locomotives for General Pershing's Army in France. 1,800 workers from GE went to war and thus females entered the workplace. Three hundred "girls" employed in the wiring department wore "special shop costumes for attractive appearance and safety." Most of the production was for military use, including artillery shells for Russia and Britain.



Schenectady, decorated with Liberty Loan posters, did its part in purchasing over 4 million dollars of bonds. The Schenectady Pipe Band, formed in 1917, performed all over the East to raise money for the war effort.

The city's newspapers kept the public well informed about our soldiers by publishing draft notices, announcement of promotions, feature articles about our boys overseas, and unfortunately, obituaries. During 12 months of fighting, approximately 200 Schenectady County residents lost their lives, many due to the Spanish Flu.

On November 11, 1918 at 3:40 a.m., Schenectady received the news. Fire trucks were dispatched with their sirens sounding to all sections of the city. Sleepy but happy sextons rang their church bells. There was a large spontaneous public gathering downtown. The war was over.

By James M. Strosberg

EXHIBITS and PROGRAMS

For more information please visit our website, schenectadyhistorical.org. To reserve your place in our Family Programs, Spring Break Workshops, or American Girl Teas, please visit schenectadyhistorical.org/families

On Exhibit at 32 Washington Avenue

Opening January 21:

Together Until the End: Schenectady in WWI

Devastating, morbid, and totally unprecedented, World War I changed our world entirely and redefined modernity. Now, 100 years later, we're exploring the Great War's effect on Schenectady and the people who lived here. The soldiers who fought, the nurses who cared, and everyone at home whose world was reshaped, completely.

Ongoing:

Boomtown: Immigration, Technology, and Urban Schenectady

Local Eats: What Does Your Food Say About You?

On Exhibit at Mabee Farm Historic Site

Through April 2017:

Changing Waters: The Story of the Mohawk River

How has the river that stretches from one end of our county to the other changed our lives, and how have we influenced the river over the centuries? You might be surprised to find out just how big of an impact the Mohawk has on your life!

Through January 28:

All In A Day's Work: A Rural Physician's Portraits of People in the Adirondacks

Look through the lens of Dr. Daniel Way at the characters, living legends, physicians, war veterans and regular people of the Adirondacks.

Opening February 2:

Seasons on the Farm: Plein Air Paintings by Deborah Angilletta

Plein air painting is about leaving the four walls of your studio behind and experiencing painting on site. From spring to autumn, local artist Deborah Angilletta spent time each week capturing views of the Mabee Farm, taking advantage of natural light and color. Join us for the opening reception on 2/2 @ 6:00pm.

Program Calendar

Saturday, January 7 – 2 PM

Mapping David Vaughn's NY with Craig Williams

@ Mabee Farm; \$5, free for SCHS Members

Join us as we uncover the story of Irishman David Vaughn's life, from his expertise in drafting maps to his reflections of life on the Erie Canal.

Friday, January 13 – 7 PM

Howlin' at the Moon with Running the River

@ Mabee Farm; \$5

Brave the cold and deep snows and join us as we kick off the tenth year of Howlin' at the Moon!

Saturdays, January 14 & 21 – 11 AM

Workshop: Stained Glass Mosaic with JoElla Casse

@ Mabee Farm; \$100, includes materials, pre-registration required

Design and create a glimmering stained glass mosaic in this two-day workshop!

Saturday, January 14 – 2 PM or

Wednesday, January 25 – 7 PM

Oral History Workshop: Hurricane Irene

@ Mabee Farm; Free

We're recording personal stories of Hurricane Irene for inclusion in an upcoming exhibition. A partnership with the NY Folklore Society.

Wednesday, January 18 – 1:30 PM and

Saturday, January 21 – 10:30 AM

Family Program: Curator for a Day!

@ Mabee Farm; \$5, pre-registration required

What is a curator and what do they do? Join us as we discover how to preserve artifacts, and then put them all together for a new pop-up exhibit!

Saturday, January 21 – 2 PM

Together Until the End: Schenectady in World War I with Dr. Richard Fogarty, UAlbany and exhibition opening reception

@ 32 Washington Ave; \$5, free for SCHS members
Join Dr. Richard Fogarty -- UAlbany assoc. professor & expert in 20th century war and society -- as we open our new exhibition. Light refreshments served.

Wednesday, January 25 – 1 PM

Gallery talk & book signing with Dr. Daniel Way, photographer

@ Mabee Farm; free

Meet photographer Dr. Daniel Way and discover his journey from rural doctor to portrait artist in the Adirondacks. His works are currently on display.

Saturday, January 28 – 8 AM - 8 PM

Bus Trip to the Boston Museum of Fine Arts

@ 32 Washington Ave (departs from); \$95, includes ticket, pre-registration required

Hop aboard and get lost in the MFA's extensive galleries! Explore everything from Impressionist paintings and Egyptian mummies to contemporary masterpieces and the best of American art and artifacts. The MFA has it all!

Saturday, February 4 – 2 PM

"The Battle of Lake George" Book Talk & Signing with author William Griffith

@ Mabee Farm; \$5, free for SCHS members

Join historian William Griffith as he explores the thrilling history behind the first major British battlefield victory of the French and Indian War.

Monday, February 6 - 5:30 PM

WWI Film Series: Shoulder Arms

@ the Swanker Board Room in the Schenectady County Public Library; Free

SCHS and SCPL are partnering for a World War I Film Series to highlight the Historical Society's new exhibit *Together Until the End: Schenectady in World War I*. Our first of the series is Charlie Chaplin's *Shoulder Arms*.

Friday, February 10 – 7 PM

Howlin' at the Moon Concert with The Nellies

@ Mabee Farm; \$5

The moon is full, the snow is heavy, and we're howlin' with The Nellies!

Saturday, February 11 – 2 PM

Reverend Horace G. Day: Abolitionist Minister in Schenectady with Neil Yetwin

@ Mabee Farm; \$5; free for SCHS members

Local historian Neil Yetwin will be presenting on the life of Rev. Horace G. Day. Rev. Day was the pastor at Schenectady's First Baptist Church for over 50 years and used his position to promote his abolitionist views.

Monday, February 13 - 5:30 PM

WWI Film Series: All Quiet on the Western Front

@ the Swanker Board Room in the Schenectady County Public Library; Free

SCHS and SCPL are partnering for a World War I Film Series to highlight the Historical Society's new exhibit *Together Until the End: Schenectady in World War I*. Join us for World War I silent classic *All Quiet on the Western Front*.

Wednesday, February 15 – 1:30 PM or

Saturday, February 18 – 10:30 AM

Family Program: Seasonal Sports

@ Mabee Farm; \$5, pre-registration required

While most people think of wintertime as the perfect excuse to bundle up and stay indoors, Schenectady's residents have still found ways to spend plenty of time outside. Come behind the scenes to see some of the more seasonal artifacts from our collection, then, if conditions allow, participate in a competition to build a reproduction of the first ever recorded snowman!

Saturday, February 18 – 2 PM

Publishing Your Family History with Phyllis Zych Budka and Seena Drapala

@ 32 Washington Ave; \$5, free for SCHS members

Have you ever wanted to publish your family's history? Phyllis Zych Budka, author of *The Masked Dramatic Circle: Polish American Theater in Schenectady, NY*, and Seena Drapala, author of *Poems and Life of Karen Valborg Sofie Rasmussen* will present on their experience self-publishing books on their family's history.

Monday, February 20 - 5:30 PM

WWI Film Series: Paths of Glory

@ the Swanker Board Room in the Schenectady County Public Library; Free

SCHS and SCPL are partnering for a World War I Film Series to highlight the Historical Society's new exhibit *Together Until the End: Schenectady in World War I*. Stanley Kubrick's 1957 film *Paths of Glory* will be featured.

Tuesday, February 21 – 1:30 PM

Family Winter Break: Mad about Maps!

@ 32 Washington Ave; \$5, pre-registration required

Do you love a good map? Can't resist plotting out a chart? Then this spring break workshop is for you! Join us at the Schenectady County Historical Society as we explore some of the maps in our collection, and try your hand at making your own!

Wednesday, February 22 – 1:30 PM

Family Winter Break: Baking up a Storm!

@ Mabee Farm; \$5, pre-registration required
Join us this winter break to learn about how we baked our bread, from Colonial to convection. Be prepared to get your hands floury and have fun while learning about history!

Thursday, February 23 – 1:30 PM

Family Winter Break: Painting Portraits!

@ 32 Washington Ave; \$5, pre-registration required
In today's world of selfies, the idea of posing for a portrait might seem strange. Join us to peek behind the scenes at portraits in the SCHS collection, then try your hand at making your own self-portrait!

Friday, February 24 – 2 PM or

Saturday, February 25 – 2 PM

American Girl Doll Tea

@ 32 Washington Ave; \$8; pre-registration required
Join us for an American Girl Tea with Rebecca Rubin! We'll explore immigration and culture in 1914 NYC while enjoying tea and goodies and making a craft.

Monday, February 27 - 5:30 PM

WWI Film Series: A Very Long Engagement

@ the Swanker Board Room in the Schenectady County Public Library; Free
SCHS and SCPL are partnering for a World War I Film Series to highlight the Historical Society's new exhibit *Together Until the End: Schenectady in World War I*. French film *A Very Long Engagement* will be featured.

Saturday, March 4 – 2 PM

Wicked Mohawk Valley with Dennis Webster, author

@ Mabee Farm; \$5, free for SCHS members
From bootlegging to brothels to racketeering, Dennis Webster has collected the most thrilling stories of deception and mayhem within the Mohawk Valley. Join us for a book talk and signing.

Saturday, March 11 – 2 PM

War on the Middleline with James Richmond

@ 32 Washington Ave; \$5, free for SCHS members
Book talk and signing exploring the story of the Kayaderosseras Patent and the pioneers who settled along this freshly cut path in the wilderness and were immediately confronted by war. Audience participation is encouraged!

Saturday, March 11 – 7 PM

Howlin' at the Moon Concert with Everest Rising

@ Mabee Farm; \$5
Melting snow, thawing earth, and a night of howlin' with Everest Rising!

Wednesday, March 15 – 1:30 PM or

Saturday, March 18 – 10:30 AM

Family Program: Great Migration

@ 32 Washington Ave; \$5, pre-registration required
In the first half of the 20th Century, 1.6 million African-Americans moved from the South up to cities like Schenectady in search of a better life. Take a guided walking tour through the Stockade District before exploring primary source documents from the collection to gain a better understanding of what life was like for a new resident of Schenectady.

Saturday, March 25 – 2 PM

The Unknown Museums of Upstate New York: A Guide to 50 Treasures with Chuck D'Imperio

@ Mabee Farm; \$5, free for SCHS members
Road-trip with us through Upstate NY as author D'Imperio uncovers the hidden treasures of the region.

Saturday, April 1 – 2 PM

Black Soldiers of New York State: A Proud Legacy, 1750 to 1950 with Anthony Gero, author

@ 32 Washington Ave; \$5, free for SCHS members
African Americans have a long, proud and often overlooked record of serving in NYS armed forces. Join us as Gero explores the contributions of NY African Americans prior to the military's integration.

Thanks to our Night of Lights sponsors:



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Housemaid Wanted: Inquire Within



If we had to post a want-ad, it would go something like this: Housemaid needed to tidy up, cook breakfast, and light candles. Must be OK with never leaving a glassed-in enclosure, and absolutely cannot be more than five inches tall.

I doubt we would get many applicants. It's a good thing, then, that the occupants of the Yates [Doll]house (32 Washington Ave, Schenectady NY) don't need much looking after.

The dollhouse (built in 1834) has long been a popular piece in the Museum. This year, however, we wanted to show it in a new light. Literally. So, in conjunction with the Festival of Trees and the Night of Lights, we decided – for the first time – to illuminate the dollhouse. Hannah Miller, our intern, and I spent some time looking at options, and ultimately decided on classic Christmas lights for the outside (absolutely NOT period-appropriate, but charming nonetheless), and miniature LED candles for the interior windows (decidedly period-appropriate and just as charming). The result was a dollhouse glowing with light and emanating warmth, much the same as the real houses of the era that line the streets of the Stockade.



It's the first step in bringing to life the Yates Dollhouse, and encouraging visitors

Clockwise, from top: The Yates Dollhouse, illuminated; a mini picnic, recreated at Mabee Farm; housewares inside the dollhouse. Photos by Mary Zawacki

to spend a bit more time marveling at the miniature world that exists within our own. Next year we will be looking at options to more fully illuminate the interior of the dollhouse whilst also developing fresh interpretation for the exhibition gallery as a whole.

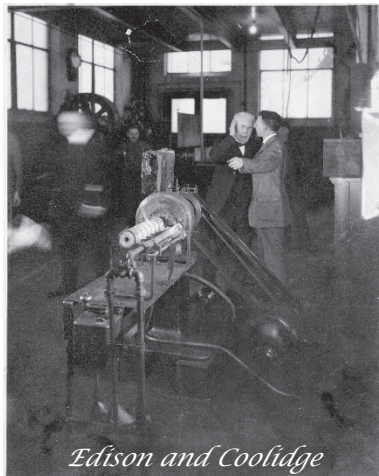
As a curator, this is one of the most exciting parts of my job. Long have I been fascinated with miniatures, and I love imagining all the possible realities within a miniature world. Though we can't play with the pieces inside the Yates Dollhouse (too old! too fragile!) simply looking at it evokes a feeling of completeness. Everything is in its place, as it has been for over two centuries. And, as we add lighting to the dollhouse, I hope others feel what I do when I look inside: peace, whimsy, and inspiration to create our own worlds and stories.

For now, though, I'll settle for lighting the candles. Someone else can cook breakfast.

Mary Zawacki, Curator

Continued from page one

Coolidge soon had his ductile tungsten forming the key components in a vacuum x-ray tube, and by 1910, the world had a greatly improved imaging device. GE dedicated Coolidge's patents to the public, while still manufacturing tubes for the numerous small companies making x-ray imaging systems.



With this tube, tissue as well as bones could now be imaged. Dr. Coolidge went on to become the Director of the GE Research Laboratory in 1932.

In 1926, GE decided to invest in one of the many x-ray equipment start-ups and, in 1946, the company bought control of Victor X-Ray Company in Chicago. The business was moved to Milwaukee, WI in 1946, where it would eventually become GE Medical Systems. General Electric, in addition to Picker Corporation in Cleveland, shared the bulk of the U.S. x-ray imaging market. Siemens, Phillips and Toshiba served the rest of the world.

The Birth of CT

For 50 years, thanks to the Coolidge x-ray tube, GE was considered the technical leader in imaging. But in 1963, unbeknownst to the x-ray industry, Godfrey Hounsfield, a smart British computer scientist working for EMI (manufacturer of radar equipment), was allowed to pursue an idea that, unbeknownst to him, had been a curiosity in academia. It was called COMPUTER-ASSISTED TOMOGRAPHY (CAT), and the goal was to better differentiate various tumor entities in the human body, for example, to see tumors in the human brain.

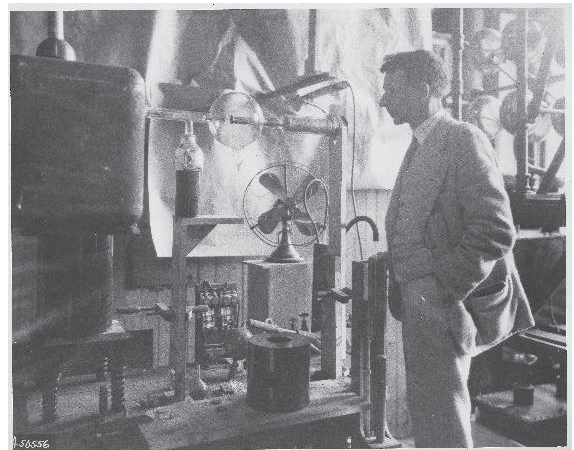
Starting in 1964, Hounsfield developed a head scanner that had a single detector for x-rays and an x-ray tube emitting a pencil beam of x-rays on the other side of the head. Once every second, the tube and detector would scan the head, rotating its position one degree for each passage as the tube/detector frame circled the head. The data defined a single slice, one-centimeter thick, which was imputed to a fast computer that could calculate an image of the slice.

In 1971, Dr. Hounsfield published his results. The industry was excited about his invention, but assumed it would be limited in use to neuro-radiologists and not have a large market. Its price was twice the cost of the most

expensive conventional x-ray system. It took 4 ½ minutes to make a scan and the resolution was poor. But, unlike conventional x-rays, the scanner could detect the density difference of a tumor, a tumor that was evident in the computed image.

In 1973, EMI produced 12 units that they sold at a fraction of their real cost to the top 12 medical schools in the world. These systems did require clamping the head of the patient against motion during the 4 ½ minutes to image one slice of the brain. A typical procedure would usually consist of 4 - 6 slices, which meant that the patient's head was held in place for more than ½ hour. It did seem worth the time and effort to find a brain tumor.

The response of the radiology community exceeded expectations and by early 1974, EMI had over 100 orders at \$375,000 apiece. That got the attention of not only the existing x-ray companies, but also of entrepreneurial scientists, who saw the need for computer processing as equally important as the generation of an x-ray beam. Except for one or two start-ups, all of these companies settled on their main improvement being to reduce the scan time per slice to two minutes. The engineering team at GE Medical Systems also concluded that it was time to develop a two-minute-per-slice scanner as quickly as possible and estimated completion in 18 months. The total test time was reduced, but the patient's head still had to be held immobile.



William Coolidge with tube and fan.

Fortunately, the Medical Systems business in Milwaukee asked the GE research scientists in Schenectady if they had any suggestions for this development. Much to the surprise of the Milwaukee engineers and management, Laddy Stahl and Russell "Red" Reddington described an entirely different design involving a fan-beam of x-ray detectors, containing hundreds of x-ray detectors in a frame that would rotate around the patient's head and not back and forth as was the case with the Hounsfield apparatus. That device had been far too complicated for the system that Hounsfield had conceived in the 1960s.

But it had the advantage of permitting an image to be created in five seconds. The potential was huge, since even images in the abdomen could be gotten with a five-second scanner. And the resolution was expected to be significantly improved. The Milwaukee team was excited with the idea, but it was seen as an early research concept, with the prototype not anticipated to be available for five years. The business could not wait to get started on the much-simpler two-minute prototype and estimated the development time to be 18 months.

As the General Manager of GE Medical Systems, I was determined not to be the 14th company making a two-minute scanner. I called my friend Art Bueche, VP and Director of the GE R&D Center, regarding the dilemma. Would it be conceivable to build a fan-beam scanner in 18 months? The team in Schenectady not only said yes, but set check points at six-month intervals that would hopefully give us confidence that they were on track. I terminated all work on our two-minute scanner and cast the success of the business on the Research Center's efforts.

Thanks to meeting the first 6-month objective to have a new x-ray detector invented which would make the fan-beam of over 300 detectors possible, Milwaukee got a boost in confidence that the Center might actually achieve their schedule. In another six months, when a small five-inch diameter prototype was actually working, the enthusiasm regarding this being a huge breakthrough in imaging exploded. In an unprecedented move, Milwaukee sent engineering and manufacturing personnel to Schenectady, assuming the whole-body scanner would work. With 6 months still to go, Milwaukee started investing in a plant to produce the 5-second scanner.

The goal for the first body image was December 31, 1975. To the day, the prototype worked, champagne was poured, and the Milwaukee team already had a building to move into. Without question, this 18-month accomplishment is acknowledged as the fastest development of a breakthrough product that General Electric had ever seen. In February, 1976, we announced this achievement and invited 100 radiologists to see the scanner working in the GE R&D Center laboratory. Within months, half of these radiologists gave GE orders with a down payment of \$100,000 on the half million dollar system.

In a spring Dinner of Appreciation at the Mohawk Golf Club, 82 laboratory employees were recognized as having been key to this project. Art Bueche and his team had a timetable that no one had believed could be accomplished. The team leaders included Red Reddington, Art Chen, Walt Berninger and Lonnie Edelheit, who would move on to become manager for the CT Laboratory being formed in Milwaukee.

The initial laboratory prototype was actually shipped in April, 1976 to the Radiology Department at the University of California in San Francisco Hospital. While it did not perform perfectly and GE had the scare of having it possibly returned, these issues got resolved between the Milwaukee and Schenectady labs. Thirteen scanners were actually sold in 1976, 35 in 1977, and well



over 100 in 1978. By then GE had over 50% of the U.S. scanner market, even though multiple imaging companies had by then announced their own fan-beam scanners.

With this success in America, GE Medical formed a joint venture in Japan and established marketing branches in the rest of the world. By 1980, GE was getting over 50% of the world orders and other imaging companies were licensing the patents that GE possessed on the CT fan-beam, 5-second scanner.

Forty years after the introduction of this scanner, it still represents the gold standard in CT imaging. Gradual improvements have reduced the scan time to a fraction of a second and improved resolution by a factor of 10. The success of the GE CT endeavor gave Milwaukee confidence to count on a breakthrough from Schenectady when magnetic resonance imaging (MRI) was invented by two SUNY professors. Once again, the GE R&D Center produced the gold standard in MRI technology.

Thanks to the R&D Center, chances are that if you go for a CT scan you will be using a GE CT scanner. Looking back, it is likely that if GE had only produced another 2-minute scanner, it would probably not be in the medical imaging business today.

References:

- B. Gorowitz, *A Century of Progress: The General Electric Story*, Schenectady, Hall of History Foundation, 1981.
- L. Janssen and G. Medford *Envision, A History of the G.E. Healthcare Business*, MBF Publishing, 2009.

Volunteer Spotlight: Paul Contarino

The Library's 25th Anniversary event in November 2016 was a great success due to hard working volunteers like Paul Contarino. We had over 30 people, including former librarians, volunteers, and SCHS trustees, show up to wish the Grems-Doolittle Library a Happy Anniversary. Library volunteer Paul Contarino put in a lot of work to set up this program and assisted with many aspects of the anniversary, including interviewing former trustee Frank Taormina, digitizing photos of the Grems-Doolittle Library over the years, and creating a timeline of the library to get ready for our silver jubilee.



Paul began volunteering at SCHS in early 2011. His first project was to organize and arrange a collection from our archives. Since then, he has worked extensively with records and documents at the Historical Society and has worked on a number of projects. During his time at the Grems-Doolittle Library, Paul has spent his time creating inventory lists, organizing collections, digitizing photos and other documents, and, as mentioned, helping to organize the Grems-Doolittle Library's 25th Anniversary. He hopes to work with the Wayne Tucker Postcard Collection at some point in the future as well.

Paul finds learning about Schenectady's long history to be a benefit of volunteering at the library. His interests in Schenectady's history range from Schenectady's role in New York's western frontier during the American Revolution, to the Erie Canal that ran through the city, to industrial pioneers like George Westinghouse Jr. and Thomas Edison that made a large imprint on Schenectady's history.

Paul enjoys volunteering at the Grems-Doolittle Library because "it's a very dedicated organization that is trying to make its collections more accessible to the public." He also finds helping researchers to be a rewarding aspect of volunteering here. Like many of our other volunteers, Paul enjoys working with other volunteers he has met. His tenure at the library has also brought him into contact with other organizations in the area such as the First Reformed Church and Vale Cemetery.

Paul's hard work and dedication has been a great asset to the Grems-Doolittle Library. His ideas and help with the library's 25th Anniversary as well as on multiple other projects that he has finished during his time as a volunteer is greatly appreciated and his work is vital to our organization. His sense of humor also keeps our Saturday volunteers entertained.

Paul has been assisting the library in gathering stories and photos about Grems-Doolittle Library for our 25th Anniversary. If you have any stories or photos relating to our library, email our librarian at librarian@schenectadyhistorical.org.

Mike Maloney, Librarian/Archivist

PastPerfect Online

The Grems-Doolittle Library is gearing up to get its catalog online. Soon you will be able to search our stacks from the comfort of your own home. We hope to have the catalog up by the end of January 2017.

Be on the lookout for the announcement on our website and Facebook page.

The Octagonal Houses of Duanesburg



The Jenkins House on Main Street in Delanson, NY. From Duanesburg's Octagonal Houses by Bill Massoth.



The Shute House on McGuire School Road in Duanesburg, NY. From Duanesburg's Octagonal Houses by Bill Massoth

Whether it's the McMansions of the 1990s, the Brutalist movement of the 1960s, or the small house movement of today, neighborhoods are often defined by quirky trends in architecture. In Duanesburg, the Shute and the Jenkins Houses are perfect examples of a quirky housing fad from the 1850s, the octagon house.

Orson Fowler was the man responsible for popularizing octagonal houses. In 1849, he wrote *The Octagon House: A Home for All*, promoting octagonal buildings as "far better in every way, and several hundred percent cheaper" than any other style of building. Fowler argued that these buildings had more floor space, increased exposure to sunlight, and saved on heating and building costs. They were an interesting architectural idea, but they never really caught on as a popular style.



Alexander Delos "Boss" Jones.

Master carpenter Alexander Delos "Boss" Jones was better known for his Greek Revival townhouses that he built around Duanesburg, but he was also responsible for the Shute and Jenkins octagonal houses.

Both the Shute and Jenkins homes were constructed entirely from wood and used a new method of stacked plank construction where horizontal planks were stacked to form a wall of solid lumber. The interiors of the buildings caused some challenging situations. The Shute house has a central square room with four square rooms surrounding it. This design created three leftover triangular rooms that were used for storage.

The Shute and Jenkins houses are 2 of 13 other octagon houses on the New York State historic register and serve as a reminder of a quirky housing fad from the 1800s.

Mike Maloney, Librarian/Archivist

Reverend Horace G. Day: Abolitionist Minister in Schenectady

Presented by Neil Yetwin



Saturday, February 11, 2017

2:00 p.m.



At the
Mabee Farm Historic Site
1100 Main St, Rotterdam
Junction, NY 12150

\$5.00 admission – Free for Schenectady County Historical Society members

To our Members and Friends,

By now most of you will have learned of the extremely generous gift from the family of Fred and Katy Kindl, who has offered the Brouwer-Rosa house at 14 North Church Street in Schenectady to the Schenectady County Historical Society, a gift which we are delighted to accept. The house offers an incomparable opportunity to look into an eighteenth century Dutch home in Schenectady, and it is an opportunity that we intend to make the most of by working with the community to find the best plan for the use and preservation of this remarkable home. We will report to you as our plans move forward, but we expect to take a year, or even two, in study before a plan emerges. Meanwhile, we will be talking to members of the community to get their ideas so that we can all be a part of the next page in the history of the Brouwer-Rosa home. We are honored to be the recipients of this wonderful home, and, on behalf of the Board of Trustees, I offer our sincere thanks to the Kindl Family!

Marianne Blanchard



A Brief History:

The Brouwer-Rosa house at 14 North Church Street was built in the early 1700s by Hendrick Brouwer. Brouwer was a fur trader and is said to have been held in very high esteem by the Native Americans who lived in the area. He may have been spared during the Schenectady Massacre because of this. The exact date of the construction of the house is unknown and it has been in a bit of a competition

with the Yates House for the title of “oldest house in Schenectady,” although it is believed that the Yates House slightly edges out the Brouwer-Rosa House.

The house has changed hands infrequently during its long history. After Hendrick Brouwer died, it remained in the Brouwer family until 1798, when it was bought by James Rosa. Rosa was a prominent Schenectady landowner and industrialist and was the superintendent of the Mohawk and Hudson Railroad. Rosa made some extensive renovations to the house including adding a south wing, raising the walls to two and a half stories, and rotating the roof to cover the new wing. Rosa’s thirteen children may have been a contributing factor for the additions to the house. The house was bought in 1919 by Jean and Gertrude Canivet, who were representing the Alstom Company to General Electric. Their grandchildren sold the house to Fred and Katy Kindl, who restored it from apartments into a single-family residence.



Many of the house’s secrets have been uncovered over time, but many remain legends. Five secret rooms have been mentioned, and the fireplace in the living room was found to have had little rooms to the side of the jambs. One of the most interesting and enduring legends is that of a tunnel that led to the Mohawk River. The tunnel could supposedly be accessed by lifting floor boards on the second floor, but so far has not been found. The fireplaces held many secrets as well. A large jamb less fireplace with a canopy, the signature of early Dutch houses, was discovered behind two smaller fireplaces in the oldest part of the house prior to the Kindl’s purchase of the house. While we won’t be actively looking for any secret rooms, the house seems to be full of surprises, so who knows what we will uncover.

Around the Society



Changing Waters exhibit at the Franchere Center.



NYS Senator Jim Tedisco(R) enjoying Fall Foliage Festival at the Mabee Farm.



Farm to Fork at the Mabee Farm barn.



Librarians celebrating Grems-Doolittle library's 25th anniversary.



Photos: Ann Aronson, Nancy Wasmund



Kyle & Kyle prepping for Eagle Project at the Mabee Farm. Completed kiosk at right.





Schenectady County Historical Society
32 Washington Avenue
Schenectady, NY 12305

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