Art & Geology

A Self-Guided Exploration of Landscapes at the Minneapolis Institute of Arts

At the Spring by Nicholas Richard Brewer c. 1895

Name:

Lab Instructor:

Earth without ‘art’ is just ‘Eh…’
Exploration Logistics

Thanks to the generosity of MIA members and supporters, admission to the Minneapolis Institute of Arts (MIA) galleries is **FREE**. The MIA is located at 2400 Third Avenue South (888-642-2787).

**Directions to the Institute are posted at:** [http://new.artsmia.org/visit/directions-maps-parking/](http://new.artsmia.org/visit/directions-maps-parking/)
The site also contains links to Google Maps (for driving directions) and Metro Transit.

**Parking** - On street parking is available around the museum, with additional parking lots listed at: [http://new.artsmia.org/visit/parking/](http://new.artsmia.org/visit/parking/)

**Institute hours** - check [http://new.artsmia.org/visit/](http://new.artsmia.org/visit/) for updates, but currently:

- **Sunday** 11 a.m. – 5 p.m.
- **Monday** Closed
- **Tuesday & Wednesday** 10 a.m. – 5 p.m.
- **Thursday** 10 a.m. – 9 p.m.
- **Friday & Saturday** 10 a.m. – 5 p.m.

_The museum is closed Thanksgiving, Christmas Eve, Christmas Day, and July 4_

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Original concept suggested by Harry Jol – University of Wisconsin - Eau Claire
Minneapolis Institute of Arts (MIA) Exploration

An exploration of the geology behind landscape paintings at the Minneapolis Institute of Arts.

Many art materials and pigments have geologic origins and it would be easy to spend a few hours exploring the geologic materials used in the creation of art. This activity’s goal is different though. Instead of examining materials, the goal here is to explore the myriad ways that artists portray geology or the Earth processes that underlie a painting’s subject.

Although this exploration is limited to the east end of the third floor gallery, you are encouraged to explore the rest of the Minneapolis Institute of Arts’ (MIA) outstanding collection on your own. You can pick up a gallery map at the information/greeting desk when you enter the MIA.

On the map above, black line segments indicate areas highlighted in the exploration while grey segments are simply suggested routes to reach the exploration’s next part. You are always welcome to find your own path. Room numbers are typically posted on the sides of each room entrance.

Exploration Start

Take the elevators or stairs to the third floor to begin your exploration in front of the large window that overlooks Washburn Fair Oaks Park and provides a great view of downtown Minneapolis.

Washburn Fair Oaks Park: Before examining painted landscapes, it seems appropriate to begin the exploration with a real one. The park below you was originally a private garden designed by Frederick Law Olmsted, the renowned landscape architect who designed New York City’s Central Park and Prospect Park. Olmsted modified and sculpted the natural landscape, even adding a now-abandoned artificial stream and small lake (the lake basin formed the low area close to the MIA). Washburn Fair Oaks is the only Twin Cities area park designed by Olmsted.
Use the map on the previous page to find Room 307

Paintings in the exploration’s first few rooms tend to depict geology in a stylized way as their focus is on human subjects or human constructions. Rocks and landforms are often portrayed in an inaccurate manner as they were only intended to establish the painting’s mood or setting.

Consequently, it is ironic that the most accurate geology depiction is *Imaginary Landscape, Italian Harbor Scene* painted in 1746 by Claude-Joseph Vernet (1714-1789). Vernet began his artistic career at the age of 14 helping his father decorate panels for sedan chairs. Within a few years, Vernet moved to Italy, where he became captivated by seascapes and spent twenty years painting them. Recalled to Paris by royal decree, Vernet spent the remainder of his life there, but continued to use Italian themes in much of his work. Vernet died in his apartment at the Louvre in 1789, the first year of the French Revolution. During his life, he was so well known that Arthur Conan Doyle’s fictional Sherlock Holmes would later claim Vernet as his grandmother’s brother.

Although Vernet once claimed that ‘others knew better how to paint the sky, the earth, and the ocean;’ his ‘imaginary landscape’ is a strikingly accurate depiction of layered sedimentary rocks (foreground and left), with vertical fractures (at left) as well as a fallen block that broke off along a fracture surface. Similar features were responsible for the formation of the Mississippi River Gorge that runs through the Twin Cities; the intermixing of natural outcrops and human structure in the background is eerily similar to how downtown Minneapolis’ mill ruins merge with natural rock layers. (see appendix).

**Room 306**

In 1793, Hubert Robert narrowly avoided the guillotine during the French Revolution when a clerical error led to another prisoner being executed in his place. Eight years before Robert’s near brush with death, he completed *The Rustic Bridge Chateau de Mereville France.* Robert did not only paint a highly romanticized landscape, but created the landscape itself. Robert was the primary architect for the Marquis de Laborde’s wholesale transformation of an open meadow and woodland into a garden to celebrate his admiration of exploration. Robert rerouted a river, created rock ‘outcrops’ with caves and brought in exotic trees to create a rustic, but highly imaginative landscape. It is perhaps the ultimate example in this tour of unnatural geology. In the painting, Robert goes a step further, greatly exaggerating the height of his artificial outcrops to create a background for the transition from a solitary individual on a wilderness path, to increasing domestication and control over the land to the domesticated cattle and buildings beyond the bridge.¹

Examine the rocks to find one area or feature that betrays their artificial nature and circle that feature in the image at left.

¹ There is an easily overlooked indirect tie to geology in this landscape. The rostral column above the rocks on the left is in memory of the marquis’ sons who were two of twenty-one members of the La Pérouse expedition that drowned in the tidal currents of Lituya Bay (in what is now Alaska) in 1786. In 1958, an earthquake-generated rock fall in Lituya Bay created the highest mega-tsunami wave (up to 300’ high) in recorded history.
As Marie Antoinette’s official portrait painter, Élisabeth-Louise Vigée-LeBrun had to flee France during the French Revolution. She painted *Portrait of Countess Maria Theresia Bucquoi, née Parr* in Vienna in 1793, during a twelve year exile. As with most of the paintings in this room, geology is used to create a setting for the human aspects of the image and is inaccurately depicted *(as seen by a moss-covered outcrop that forms a convenient armchair for the countess)*.

Examine the waterfall in the background. If you consider how waterfalls form and their impact on the landscape, what is ‘geologically incorrect’ about the waterfall in this painting?

Now turn around to look at the paintings on the opposite (west) wall. Although none of the paintings have an overtly geologic theme, one of them was inspired by geology.

**Looking at these paintings, which of them was most likely created by an artist who had witnessed a nighttime volcanic eruption of Mount Vesuvius? Which features of the painting recollect a volcanic eruption?**

This artist completed at least 30 paintings of Vesuvius in eruption. He was also close friends with John Whitehurst, a well-known geologist. The artist accompanied Whitehurst on many of his geologic trips so he was intimately familiar with different types of rocks. If you look closely at the painting you can see dots of light pigment that, as you step back, give the impression of the rock layering characteristic of sedimentary rocks.

Also on this wall is George Morland’s *Selling Fish* painted in 1792. Remarkably prolific, Morland began his career at the age of 10 and, in the last eight years of his life alone, produced 792 paintings. Yet his lifestyle was so lavish that he spent part of his last decade in debtor’s prison before dying at the age of 41. This painting is set on the Isle of Wright, which Morland fled to in 1799 to escape creditors.

Although the Isle of Wright played a prominent role in early British geology, Morland’s depiction of its rocks is highly stylized and inaccurate. ‘Outcrops’ in the foreground lie atop the sand (rather than have the sand lap up onto the rocks) while the rocks in the background are nondescript masses that are nothing like the well-layered sedimentary rocks of the actual island. Note the difference in detail of how Morland painted the fish and ray compared to his treatment of the rocks.

The actual island cliffs slope down to the water while those of the painting are rounded masses that overhang the coast. Although inaccurate, how does Morland’s treatment of the rocks combine with the painting’s other features to create its mood?
Room 305

As you enter Room 305, find Sir Joshua Reynolds’ *The Child Baptist in the Wilderness*. Although an unfinished work, Reynold’s painting epitomizes the concept of using geology to set a work’s mood rather than as an accurate depiction. The slab on which the child sits is not shaped like a natural rock slab nor is the dark rock mass that acts as the child’s backdrop. In contrast to the next set of works, geology simply was not important to Reynold’s objective.

*Walk west through the next room towards the left door to reach Room 323 (see map)*

In contrast to the works seen so far, many of the paintings in this room (323) depict rocks and landforms in accurate detail even if they are often romanticized.

Look at the paintings along the east and north walls of the room, focusing on the five below.

*by Homer Dodge Martin*  
*by Alvin Fischer*  
*by Jasper Francis Copley*  
*by Thomas Moran*  
*by Albert Bierstadt*

Most of these artists were associated with the Hudson River School of Art, an informal art movement whose heyday lasted from 1855 to 1875 (*although Fischer predated that movement*).

Compare the detail and naturalism of the geology (rocks and landforms) depicted in these works with what you remember of the tour’s earlier paintings. In these works, the rocks and landforms dominate the paintings. While romanticized, the landscape and rocks do not simply set a mood, but reveal the texture and shapes of natural rock and landforms.

*How do even the titles of the works (compared to those of the previous paintings) reflect the realism of these landscape depictions?*

Return to the exploration’s Start and enter room 301, just to the east of the window.
Room 301 Charles Russell left his Missouri home at the age of 16 to work on ranches in Montana, where he would spend most of his life. His professional art career was sparked by the blizzard of 1886-87 that ended the era of western cattle drives. When a ranch owner wrote to find out how his cattle were doing, the foreman sent a postcard-sized watercolor Russell had made of a starving cow encircled by waiting wolves. Titled ‘Waiting on a Chinook’ (see appendix), the watercolor became Russell's first publicly exhibited artwork when it was displayed in a shop window in Helena, Montana.

Russell intimately knew the West and accurately rendered its landscape and geology in his works as shown by Buffalo Hunt, painted in 1897. From a geological perspective, the painting does not simply capture a moment in time but the evolution of a landscape. In the distance, the snow-capped ridge formed as resistant igneous and metamorphic rocks were uplifted along faults in response to shifting tectonic plates. Wind and water then eroded these rising mountains, while streams swept the resulting sediment out to cover the surrounding terrain and form the flat-lying sedimentary rock layers of the intervening land and foreground. More recently, rivers responded to renewed uplift of the land by eroding the deep canyon on the painting’s right that the hunters plan to use to trap bison.

So, plate and fault movement; weathering and deposition; renewed land uplift and resulting river erosion all contributed to the rendered landscape of Buffalo Hunt. Now look at the other three Russell paintings close to this painting (The Death Song of Lone Wolf, The Signal Fire, and Spearing a Buffalo).

Choose one of these paintings and briefly describe which of these geologic processes are also reflected in the work you chose.

On the east wall of the room find Edgar Payne’s Canyon Portal, which he completed in 1935. Like Russell, Payne left his Missouri home at an early age (14) but from the start supported himself with odd painting jobs rather than as a ranch hand. Although he would eventually travel much of the world, he fell in love with the Southwest and California’s Sierra Nevada Mountains, which would become his favorite subjects.

At right is the entrance to Arizona’s Canyon de Chelley, the subject of Canyon Portal. This dramatic landscape resulted from tectonic uplift of the land and erosion of sandstone along vertical joints (fractures) in an arid climate with enough water to erode rock, yet too little to remove it entirely.

Flat natural surfaces are relatively unusual. Did Payne exaggerate the flatness of the joint faces in his painting to make them more exotic or round their surfaces to make them more believable to his Eastern audiences?
On the south wall is a painting of the Grand Canyon by Arthur Wesley Dow, *The Destroyer* (painted 1911-13). Dow taught his students that art should not simply copy nature, but be created by the artist’s eye and composition. Yet, his painting still holds enough detail to interpret the landscape’s geologic background.

River erosion not only carved the deep canyon in the painting’s foreground, but was responsible for the flat-topped mountains seen in the background and the flat horizon above the canyon. These horizontal surfaces formed as older rivers shifted back and forth across the landscape, before tectonic forces uplifted the land and caused the rivers to renew their down-cutting. Dow even faithfully distinguishes between layered sedimentary rocks of the distant mountains and upper canyon cliffs and the underlying massive igneous and metamorphic rocks of the canyon’s lower cliffs.

Georgia O’Keefe’s *Perdenal - From the Ranch #1* (1956) is next to Dow’s *The Destroyer*. The reddish rock hues of both works are due to the mineral hematite. In a form of artistic cannibalism, hematite-rich rock was ground to create the reddish brown pigments used to depict both painting’s rocks. O’Keefe was born on a dairy farm near Sun Prairie, Wisconsin in 1887. Although she decided as a child to become an artist, by the time she was 21 O’Keefe was so discouraged that she stopped painting. Fortunately, four years later she learned of Arthur Wesley Dow’s approach to art and was inspired to paint again, building on his ideas to create her own unique style. In 1934 she moved from New York to Ghost Ranch, New Mexico which would become her home for the remainder of her life. She was so fond of Perdenal Mountain, seen here through a hip bone opening, that she arranged to have her ashes scattered from its peak when she died in 1986 at the age of 98.

*Although O’Keefe’ work is more highly stylized than Dow’s, which features of her painting still reflect past river processes and a tectonically-uplifted landscape?*

Continue on to room 302. The next three paintings are just to your right as you enter.

**Room 302**

Nicholas Richard Brewer’s 1895 work *At the Spring* (see front cover) is a wonderful example of how geology may underlie a painting’s subject without taking center stage. The scene is a low area as springs form where groundwater and land surfaces intersect. A pipe brings spring water to a box where sediment settles out before clear water continues on to the trough where the mother and child play. Water continues to spill over the trough’s end as the spring continues to flow. Geology underlies the painting’s composition, yet no obvious geologic features are shown.

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2 Surprisingly, it was not until the western expeditions of the Grand Canyon and American Southwest during the 1870s that geologists accepted that rivers actively carve the landscape rather than passively flow down pre-existing valleys. With an arid southwest climate, the tie between rivers and valleys was more obvious than in the heavily vegetated regions of eastern North America and Eurasia. In addition, tectonic uplift caused the rivers to cut their way down through the landscape, entrenching deep valleys into the landscape and leaving a flat-topped mesa as erosional relicts of previous river-carved horizons.
In a similar manner, a wealth of geologic background lies behind Alexander Grinager’s 1894 *Boys Bathing*. At first glance the painting appears to be an idyllic rural setting, but it is actually a highly urban area close to the industrial heart of a major city. Grinager carefully cropped his image to hide its urban nature as the University of Minnesota campus lies just above his painted background. These boys are on the banks of the Mississippi River, just downstream of Saint Anthony Falls. Although retreat of Saint Anthony Falls had formed a wide, bluff-lined gorge, within this gorge the downstream river meandered back and forth, forming sandy deposits on the slow-flowing inner banks of river curves that are called point bars.

The point bars on the Mississippi River south of Saint Anthony Falls were large enough to host small communities, but were flooded so often that only poor immigrants tended to live there. Hence, Grinager’s work has a hidden social legacy as well. All of these boys lived in a point bar neighborhood called Bohemian Flats. As children of Scandinavian and Irish immigrants, they faced limited prospects and were likely to spend much of their lives in poverty. Grinager’s sympathetic portrayal might reflect his own background as the son of Norwegian immigrants.

*Off the Coast* is the first of six MIA-held paintings by Alexis Jean Fournier. Born in St. Paul, Fournier spent most of his early childhood in Wisconsin. At the age of 14, he moved to Minneapolis, supporting himself by painting signs and stage scenery. In 1886, the year he painted *Off the Coast*, Fournier joined the newly established Minneapolis School of Art (now the Minneapolis College of Art and Design) apparently as one of only two male students in its 28-student inaugural class taught in a downtown Minneapolis rented apartment.

*Off the Coast* accurately depicts the geology of Lake Superior’s North Shore. The rocks formed over a billion years ago when North America was stretched and broken by immense rift valleys that hosted long lines of volcanic vents. Flow after flow of basaltic lava poured out across the floor of these rift valleys to form thick sequences of dark igneous rock. If rifting had continued, North America would have been broken apart into two or more continents and rocks depicted here would have formed part of a new ocean basin seafloor. Instead, rifting ceased and North America remained a single entity, with only the stillborn ocean crust of the North Shore to suggest what might have been. As the volcanic rock cooled and contracted, vertical cracks or fractures formed in the rock that would later be exhumed by glaciers and encroaching surf to form vertical cliffs. In 1886, the region was in the midst of transition and remnants of its once seemingly inexhaustible pine forests still lay beyond the logging industry’s reach to cloak the cliff edge. A sense of transition is also reflected in the steamship’s sail rigging, as despite nearly a century of steam transport, long distance shipping in 1886 still relied on a combination of sail and coal.

*Besides their vertical fractures, which features of the rocks shown in the painting reflect their origin from multiple lava flows?*
The remainder of this exploration takes place in **Room 303**

Painted in 1855, *Saint Anthony Falls as it appeared in 1848* was Henry Lewis’ attempt to recapture the falls’ natural look as he first saw them. By 1855, people had already begun to transform the falls into an industrial complex that would quickly become the world’s largest hydropower complex. Lewis began his artistic career in his teens, painting stage scenery, but between 1846 and 1848, he explored the Mississippi River Valley, sketching hundreds of scenes. Many of these were completed on a large floating studio that Lewis constructed at Fort Snelling which he named the Mene-ha-hah after a nearby waterfall. On some of his travels, Lewis was accompanied by a geologist, David Dale Owen, who sparked his interest in geology. While at Fort Snelling, Lewis also met Captain Seth Eastman and purchased seventy-nine of Eastman’s sketches which he combined with his own work to construct an immense panorama of the river valley that was 12’ tall and over 1300’ long. In an era before movies, moving panoramas were wildly popular. With musical accompaniment, dramatic lighting effects, and Lewis’ narration, his panorama brought the Mississippi River to audiences across North America and Europe. In 1854, Lewis moved to Dusseldorf, Germany where he completed many paintings, including this one, based on his earlier sketches.

*Two types of islands were originally present at Saint Anthony Falls. Some formed as erosional remnants left behind by the waterfall’s retreat while others were built by deposition of river sand. Which of these island types dominate Lewis’ painting?*

Based on sketches made during a 1857 visit to Saint Paul, Ferdinand Richardt’s *Steam Wheeler on the Upper Mississippi River* (painted in 1865) could as easily be called ‘Steam Wheeler OF the Upper Mississippi River’ as steam wheelers were specifically developed to transport goods and people through the remarkably shallow Upper Mississippi River. Despite its breadth, the natural channel of the Upper Mississippi River was shallow enough that young children could wade across the river during dry months. Rafts and canoes were the only easy means of transportation until steam wheelers were built. With their engine and works above deck, steam wheelers could navigate even shallow channels with a swaying side-to-side motion that produced the distinctive ripple pattern shown in the painting.

Richardt also accurately depicted the bluffs’ appearance from river level. The Upper Mississippi River cut down through the land to form a bluff-lined valley rather than flow across open country as it does further south. Upon first seeing these bluffs many early travelers described the Upper Midwest as being nearly as mountainous as the Appalachians.

Seth Eastman began his artistic career as a map maker and illustrator with the United States Army. In 1830 he began a three-year posting at Fort Snelling, which had been built ten years earlier. Eastman made hundreds of sketches and painting of Indian life around the fort, and married the fifteen-year-old daughter of a Dakota leader. Shortly after their daughter was born, Eastman was reassigned and abandoned his wife and newborn daughter. In 1841 Eastman returned to Fort Snelling with his second non-Indian wife, and was the fort’s commander until 1848, the year he completed *The Falls of Saint Anthony*. At the time, the falls area was still largely undeveloped, although the eastern bank had been claimed for almost decade.

*Although Eastman portrayed Saint Anthony Falls as a nearly pristine natural landform, his work accurately records one feature that marks the area’s first step towards the industrial center it will eventually become. What is this feature?*
The next five paintings were all completed by Alexis Jean Fournier between 1888 and 1897. Fournier’s work beautifully captured the evolution of the Minneapolis region at a time when it was undergoing a remarkable transformation. Compare Mill Pond at Minneapolis, which depicts the area immediately upstream of Saint Anthony Falls, with Eastman’s view of the falls in 1848. Within 40 years, the area transformed from a largely natural landscape into an urban industrial center. In the same time span, its population exploded from a few hundred people to over 165,000. In Fournier’s painting new flour mills lined the river banks while older saw mills remained on platforms over the flowing water. In the painting, a five-year old stone arch bridge spans the river as railroads transported wheat in and milled flour and sawed lumber out. Low dams in the center of the painting channeled the river’s current towards its banks, increasing the water flow’s force to drive mill machinery. Raw, uncut lumber floated down the river to the quiet mill pond area beyond the central dam to be sorted and sawn.

Fournier also painted Lowry Hill, Minneapolis in 1888, a wealthy neighborhood southwest of Minneapolis’ industrial center. The hill itself is a long curving terminal moraine (linear ridge) that formed as glacial deposits at the margin of an ice sheet that covered the Minneapolis region over 12,000 years ago. Originally known as the Devil’s Back Bone, Lowry Hill was later renamed for Thomas Lowry who developed Minneapolis’ street railway system. Even to a casual observer, Minneapolis’ glacial history is easy to discern in its landscape. The city’s low flat terrain reflects the movement of vanished ice sheets, broken only by linear ridges that formed as melted ice left behind soil and rock at the ice’s terminal margins. Although the area’s rocky glacial soil is typically hidden by rich vegetation, large boulders (glacial erratics) are strewn across its surface and many lakes lie scattered across its poorly drained landscape. Which of these glacial features can be seen in Fournier’s Lowry Hill, Minneapolis?

Next is Fournier’s September, completed in 1889. Although the painting’s exact location is uncertain, it was somewhere in the Minnesota River Valley south of Minneapolis. This valley is another part of Minnesota’s rich glacial legacy. Immensely wide and lined by bluff cliffs, this valley was not carved by the present Minnesota River, but by its much larger predecessor, the Glacial River Warren. As the last continental ice sheets began to melt, melt water built up in front of the receding ice to form an immense glacial lake, called Lake Agassiz, which covered much of western Minnesota, southern Manitoba and southern Ontario. Between 9,000 to 12,000 years ago, this lake episodically, and often catastrophically, drained south to form the Glacial River Warren and carve a broad deep valley now occupied by the Minnesota River. For the Dakota people, the valley provided a rich ecosystem. Its thick glacial and fluvial soils sustained their agriculture while they could drive bison herds over the bluffs or collect diverse animal resources from the valley’s wetlands, a heritage reflected by Fournier’s solitary hunter. The Minnesota River Valley became the Dakota’s last refuge in Minnesota, a place they never ceded by treaty but were only driven from by force during the Dakota War of 1862. The present valley is so wide that many visitors do not even realize they are in a river valley. What feature of the valley is depicted in the background of Fournier’s September that reminds the viewer that this hunter and his canine companion are within a valley?

Fournier’s After Rain, on Minnehaha Creek captures the still natural setting of Minnehaha Creek in 1887, as seen upstream of Minnehaha Falls. Two years earlier, the state legislature began to acquire this area to establish what would have been Minnesota’s first state park, but in 1889, the land was instead turned over to the neighboring city of Minneapolis to become a rural addition to their growing park system. Beginning in 1875 a train station at Minnehaha Falls provided Minneapolis citizens access to the area with up to 39 round trips a day, yet the surrounding countryside was still largely untouched at the time Fournier painted it.
Farnham’s Mill at St. Anthony Falls, Minneapolis is the last Fournier painting on the tour. Completed in 1888, the painting focuses on one of the first sawmills at Saint Anthony Falls, built on the southern edge of Hennepin Island where the University of Minnesota’s Saint Anthony Falls Laboratory currently stands. In 1888, sawmilling at Saint Anthony Falls was in its final years as flour mills along the river banks came to prominence. Although Fournier’s painting almost looks rustic, the mill is in the heart of a city’s industrial core. Lurking in the background is the tower of Exposition Hall (built in 1886) and if you walk back to Fournier’s Mill Pond at Minneapolis, Farnham’s Mill is just upstream of the Stone Arch Bridge.

In contrast, Henry Lewis’ 1847 Cheever’s Mill on the St. Croix River does portray a more rural setting. Cheever’s Mill was built downstream of the St. Croix rapids, on the Wisconsin side of the river, just upstream from what is now Interstate Park. Just as Saint Anthony Falls blocked boats from traveling further upstream, the St. Croix Rapids marked the northernmost limit of boat travel on the St. Croix and was the point where many of Minnesota’s Scandinavian immigrants disembarked to spread out over the surrounding countryside.

Both paintings show sawmills on rivers flowing through bluff-lined river valleys, but one valley formed as water flowed down fractures to undercut blocks of sedimentary carbonate rock and the other valley formed as a now-vanished glacial river cut down through thick layers of cooled volcanic lava flows. What details of the two paintings allow you to distinguish which valley formed from which process?

Just in passing, note Julius Holm’s painting of St. Paul.

What characteristically Midwestern phenomena occurred in St. Paul in 1890?

Edward K. Thomas’ View of Fort Snelling completed in 1850 shows a somewhat romanticized view of the fort across the river with a trading post and Indian camps in the foreground. Like Seth Eastman, Sergeant Thomas was a soldier artist at Fort Snelling who gained a fair amount of attention during his posting there for his reproductions of European paintings and portraits of Indian life. Although a self-taught artist who never achieved Eastman’s sophistication, Thomas was still talented enough that for many years this painting was attributed to Eastman. Infrared and ultraviolet examination in the 1960’s finally revealed a partially legible inscription on the painting’s reverse side that identified it as Thomas’ work.

Thomas’ painting not only depicts the area’s human elements, but its geologic elements as well. The Minnesota River flows from the left and splits to flow around Pike Island (named after Zebulon Pike of Pike’s Peak fame) before meeting the Mississippi River which flows into the areas from the right background. Both river valleys are lined by steep bluffs, legacies of waterfalls that retreated through the area within the past 10,000 years as rivers began to modify a landscape revealed by the melting of continental ice sheets.
S. Holmes Andrew’s **St. Paul** (1855) is not a precise representation of St. Paul, as the rocks, vegetation and landscape are not accurate. However his work does capture the essence of the city’s infancy, at a time when its population was still less than 5,000. The next year, over 30,000 people would arrive at St. Paul as immigration began in earnest. St. Paul’s location has a geologic underpinning. In the past, a number of ice sheets covered the region. As each ice sheet melted away, rivers began to carve channels through the newly revealed land surface that would then be filled by glacial sediments when the next ice sheet formed. Through time, the repetition of ice and water processes created a network of sediment-filled buried river valleys through the Twin Cities area. Most of the area’s current lakes overlie these older sediment-filled valleys as the sediments compact to form lake basins. At St. Paul, two of these buried river valleys intersect the rock bluffs. Instead of vertical cliffs, these sediment-filled valleys form gentle slopes that provided the local population with easy access to the river and boat landings. This access was the reason early settlers chose this location for their town.

Andrews’ work does portray this general landscape reasonably well. Harriet Island in the foreground was still an island and one of the slopes formed from the buried river channels lies before the town, the other can just be seen downstream. Andrews inaccurately portrayed the river bluffs as being covered by vegetation, but his general topography is true.

*There are flat areas by the river, so why did the people choose to build their town above the bluffs? In terms of river processes, what advantage might this higher location provide?*

Another artist who began his career as a self-taught sign painter, Edwin M Davis completed **Channel to the Mills** in 1913, the year he left Minnesota to work in the western states, spending much of the remainder of his life in Nevada and California. His painting highlights the exceptional transformation of the Saint Anthony Falls area. Look back over your right shoulder at the paintings of Saint Anthony Falls in 1848 that were completed by Eastman and Lewis. In only 65 years, Saint Anthony Falls went from a largely untouched natural waterfall to the industrial core of a major city with a population well over 300,000.

One of the people credited with much of the area’s transformation was James J. Hill, whose Great Northern Railway brought western wheat to mills at the falls and shipped flour out. To recognize the role his railroad played in the city’s history, seventeen prominent Minneapolis businessmen commissioned the Tiffany Company’s 1884 **James J Hill Presentation Tray** to commemorate the completion of the Stone Arch Bridge in 1883. Never intended to be used, the tray design captures the falls in a time of transition. Fittingly, sawmills built over the river are almost hidden by Hill’s Stone Arch Bridge, whose railroads drove the rise of the riverbank flour mills that eclipsed and eventually replaced the older sawmills. In the background, are the towers of the second Hennepin Avenue suspension bridge completed in 1876.
For the last part of the exploration, simply wander through the MIA’s other galleries and find some work of art that resonates with you for whatever reason. It definitely does **NOT** have to have any connection with geology.

**Simply give the artwork’s title, artist’s name and its room number (if posted) below. Then briefly explain why you chose that artwork as a personal favorite.**

As an example, one of my personal favorites is *Veiled Lady* by Raffaelo Monti (c. 1860) located in room 357.

No photograph can do this one justice. You have to see it in person to appreciate the artist’s ability to trick your eye into thinking the marble veil is transparent.

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**APPENDIX  -  Non-MIA Images Mentioned in Exploration**

Minneapolis Mill Ruins – from page 4

Waiting on a Chinook (1887) – from page 7