



# THE FORGE OF A NEW NATION

**Why the Civil War—and the unconditional surrender of the Confederacy—still matters today.**

**By Steven Hahn '73**

**A** AMERICANS HAVE ALWAYS HAD AN UNEASY RELATIONSHIP TO THEIR Civil War, all the more in evidence as we commemorate its sesquicentennial. On the one hand, the war still rivets the public attention and imagination. Americans read countless books and magazine articles, sit through hours of feature films and documentaries, and visit many of the sites of battle, sometimes on scorching hot summer days. On the other hand, the war confounds our trust in the country's democratic institutions; indeed it serves as a dispiriting reminder of how those institutions can fail us and exact a terrible price in bloodshed and destruction, especially sobering in our current, and highly polarized, political environment.

Small wonder that a great many Americans regard the war as a tragic episode, and believe that we would have been far better off if warfare had been avoided and the deep disputes over slavery settled through peaceable political means.

Yet, Steven Spielberg's recent film, *Lincoln*, which focused on the passage of the Thirteenth Amendment ending slavery in the United States, suggests that we ought to think hard about what the war and the military defeat of the Confederate rebellion made possible. And, by extension, we ought to think about what anything less than a war fought over the future of slavery would have meant for the future of the United States. However much we may long for a politics of "compromise," a glimpse of what the United States would have looked like if the war was avoided or ended in anything short of the Confederacy's

unconditional surrender shows how tragic that would have been.

How is this so? We usually think of the antebellum United States as being neatly divided between “slave” and “free” states, but we can easily forget how pervasive and powerful slavery and slaveholders were for all of our early history. At the time of the American Revolution, slavery was legal in each of the 13 colonies and slaveholders played a central role in establishing the country’s independence (Jefferson, a Virginia slaveholder wrote the Declaration of Independence) and constructing the framework of American governance (slaveowner James Madison was the Constitution’s architect). Owing to the “federal ratio” (Article I, Section II), which counted slaves as three-fifths of a free person for the purpose of congressional apportionment, and the “fugitive slave clause” (Article IV, Section II), which required people living in states where slavery might be illegal to return runaway slaves to their owners, the institution of slavery achieved constitutional sanction, slaveholders gained more representation than any other group of Americans, and the condition of enslavement attached to the body of the slave wherever he or she went.

It is true, of course, that the states of New England and the Middle Atlantic began passing emancipation statutes between 1770 and 1804. But those statutes generally freed only the children of slaves and only when they reached adulthood. They abolished slavery gradually, very gradually. So confusing and opaque were many of those statutes that most of the northern states had to enact them twice (New Hampshire as late as 1857), and some of the gradually liberated slaves ended up making the transition not to freedom but to indentured servitude which seemed acceptable to many courts. Recent scholarship has uncovered evidence of slaves in New Jersey as late as 1860, and to these may be added hundreds of fugitives from slavery who were no less slaves in Vermont than they were in Virginia.

**U**sing the benefits of the federal ratio and their determination to protect slavery from outside interference, southern slaveholders were pretty much able to control the government of the United States between the ratification of the Constitution in 1788 and the election of Abraham Lincoln in 1860. Southern slaveholders commanded the presidency, the Supreme Court, and the diplomatic corps; they exerted enormous power in Congress through their dominance of the Democratic Party; and they were responsible for every territorial addition to the United States (beginning with the Louisiana Purchase), through military or diplomatic means, with the full expectation that slavery would be legal there.

In 1857, in its *Dred Scott* decision, the Supreme Court, with a southern majority, confirmed this perspective: the court insisted that slaveholders had the right to bring their slaves into all federal territories, that people of African descent couldn’t become citizens of the United States, and that the interests of slaveholders had to be supported by the federal government where the federal government was empowered to act. Enriching themselves on the value of the cotton crop, southern slaveholders emerged as the wealthiest landed elite in the world with what appeared to be a stranglehold over the industrializing economies of Europe and North America. This is why they thought they could win the battle over slavery’s future, and this is why the distinguished historian Don Fehrenbacher could call the antebellum United States a “slaveholding republic.”

History, of course, has an aura of inevitability, and it is hard for us to imagine alternative outcomes that appear reasonable. But in 1860, the outcome of the Civil War as we have come to know it—decisive Confederate defeat, the abolition of slavery without gradualism or compensation to slaveowners—would have seemed, to most Americans, the least likely possibility. After all, the country had been to the precipice numerous times before and managed to pull back. No one in the antislavery movement other than John Brown had a plan for how to bring emancipation about. Racism was widespread among white Americans, northern as well as southern. And Lincoln conceded that he had no constitutional authority to disturb slavery in the states where it remained legal. Army chief Winfield Scott and Secretary of State William Seward both pressured Lincoln to abandon Fort Sumter, and once hostilities commenced, Lincoln had a tough time getting his generals—McClellan chief among them—to move. The Union side suffered early defeats that were nearly catastrophic, and the war entered a prolonged period of stalemate that sapped the morale of soldiers and civilians alike. As late as the summer of 1864, Lincoln had little confidence that he would win reelection and suggested entering into negotiations with the Democratic opposition that was calling for an armistice and the rollback of emancipation policy. Which is to say that the country could very well have reached its turning point and either failed to turn or turned quite differently.

Had the Civil War been avoided by some compromise settlement or had the war ended either with a quick Confederate victory or, more likely, an armistice, the history of the United States would have been drastically different from anything we are familiar with. And it would not have been a better result. While engaging in the “might have beens” of history always carries risks and dangers, there are some things that we can say with confidence.

One is that while slavery probably would have been abolished at some point, it would not have been abolished either by presidential decree (the Emancipation Proclamation) or constitutional amendment (the Thirteenth). It would have been abolished gradually over an extended period of time (Lincoln’s original plan envisioned a 35-year emancipation), much as it was in the northern states and other parts of the hemisphere, with various forms of compensation to owners (no one ever talked about compensating slaves for two centuries of unrequited labor). There would have been African-American slaves in the United States well into the 20th century, and whatever a future Thirteenth Amendment to the Constitution would have involved, it would not have been about abolishing slavery.

Nor would there have been a Fourteenth Amendment establishing birthright citizenship in the United States and providing all Americans with the “equal protection of the laws.” There would have been no civil rights bills defining what rights freed slaves or any American citizens were entitled to, and there would have been no Reconstruction Acts extending the elective franchise to black men in the south or a Fifteenth Amendment enfranchising black men in the north. Only Confederate defeat made these possible. Otherwise, *Dred Scott* would still have been the law of the land, and states would have continued to use the language of racial exclusion to define their electorates. The word “white” appeared in most state constitutions in regard to who was eligible to vote.

What of the distribution of power in the United States? Had there been a negotiated settlement of the slavery question or had the war ended up differently, slaveholders would have remained a powerful force in the country. They would have retained home rule

and would have compelled the federal government to use its resources to back them up and strengthen their police power as slavery was being gradually abolished. They would have successfully enacted “black codes” that established an officially separate civil status for people of African descent (pass laws, corporal punishments, limits on the occupations they could practice and the property they could own, highly unequal standing before the law), and they would have simply excluded African Americans from the use of public facilities and social services, whether schools, hospitals, parks, or theaters. They also would have been able to shape national policy more fully, and would have made it very difficult for the Republican Party (only founded



in the 1850s) to get a national footing. The result would likely have been a multiparty system, and perhaps the sort of national disintegration that Lincoln had feared in 1861: the breaking apart of the United States into a number of distinct republics and confederations, something in the manner of colonial Spanish America earlier in the 19th century.

On an international level, a negotiated political settlement avoiding war or a different outcome to the Civil War itself, may well have breathed new life into slavery elsewhere. By the mid-1860s, slavery had been abolished throughout the Western Hemisphere except for Cuba and Brazil, but these were still large and powerful slave societies. Cuba had become the leading sugar producer in the world and Brazil had become the leading coffee producer owing to slavery’s expansion around Rio de Janeiro and Sao Paulo. As it was, some defeated Confederates fled to both of these places from the United States once the war ended, but under other circumstances, southern slaveholders might have forged an alliance with their counterparts in Cuba (perhaps annexing the island) and Brazil, and could have pursued a political objective that had interested many of them before the Civil War: promoting the expansion of slavery into Mexico and Central America.

Thus, by the end of the 19th century, the United States might have looked like a rather unattractive mix of Germany, South Africa, Brazil, and other parts of Latin America. It might have encompassed a loose federal system in which effective power was shared

## Why Enlist?

This spring marks the 150th anniversary of several pivotal moments in the history of the Civil War. President Abraham Lincoln issued the Emancipation Proclamation on Jan. 1, 1863, and in March of that year, the 54th Massachusetts Volunteer Infantry, one of the first African-American units, was authorized to enlist soldiers for the war.

The proclamation and the efforts to enlist African Americans for the 54th prompted Frederick Douglass—former slave turned social activist and publisher—to formally declare why black men should join the fight against the Confederacy. He outlined his nine reasons in an April 1863 edition of *Douglass’ Monthly*, which he published in Rochester from 1858 to 1863.

Here’s an excerpt:

**“First.** You are a man, although a colored man.”

**“Second.** You are however, not only a man, but an American citizen, so declared by the highest legal adviser of the Government, and you have hitherto expressed in various ways, not only your willingness but your earnest desire to fulfil any and every obligation which the relation of citizenship imposes.”

**“Third.** A third reason why a colored man should enlist is found in the fact that every Negro-hater and slavery-lover in the land regards the arming of Negroes as a calamity and is doing his best to prevent it.”

**“Fourth.** You should enlist to learn the use of arms, to become familiar with the means of securing, protecting and defending your own liberty.”

**“Fifth.** You are a member of a long enslaved and despised race. Men have set down your submission to Slavery and insult, to a lack of manly courage. . . . You should enlist and disprove the slander, and wipe out the reproach.”

**“Sixth.** Whether you are or are not entitled to all the rights of citizenship in this country has long been a matter of dispute to your prejudice.”

**“Seventh.** Enlist for your own sake. Decried and derided as you have been and still are, you need an act of this kind by which to recover your own self-respect.”

**“Eighth.** You should enlist because your doing so will be one of the most certain means of preventing the country from drifting back into the whirlpool of Pro-Slavery Compromise at the end of the war, which is now our greatest danger.”

**“Ninth.** You should enlist because the war for the Union, whether men so call it or not, is a war for Emancipation. The salvation of the country, by the inexorable relation of cause and effect, can be secured only by the complete abolition of Slavery.”

Douglass lived in Rochester for more than two decades, including crucial years of his antislavery activism. The University’s collections hold more than 100 of his letters, dating from before the Civil War, when Douglass was editor of *The North Star*, an antislavery newspaper that he published in Rochester, to a few years before his death in 1895. The collection also includes photographs of Douglass and copies of his newspapers. To read the full text of his essay, “Why Should a Colored Man Enlist?”, visit the website for the libraries’ Frederick Douglass Project at [www.lib.rochester.edu/index.cfm?PAGE=4396](http://www.lib.rochester.edu/index.cfm?PAGE=4396).





French West Indies. Many more were learning about a developing antislavery movement in the northern United States and the prospect that they might have powerful allies in their own battles for freedom. News of Lincoln's election campaign swept through the slave quarters across the southern states, and word of his election and inauguration electrified the hopes and expectations of many slaves. Thus, when Lincoln sent troops south to suppress the Confederate rebellion, slaves launched a rebellion of their own: they fled their plantations and farms, headed to Union lines, and increasingly forced the federal government to deal directly with the fate of slavery where it existed and had thrived. Little by little the Lincoln administration embraced emancipation and eventually armed the slaves to bolster its military goals. This is what turned the tide; this is what vanquished the slaveholders politically and militarily and ended slavery without gradualism; this is what made a new country.

To be sure, some of most impressive gains of the Civil War era were implemented in a half-hearted fashion and soon rolled back. The federal commitment to black political rights and especially to the exercise of black political power was ambivalent at best, and the Supreme Court soon limited the reach of federal authority to enforce the civil and political rights that the new constitutional amendments appeared to ensure.

Once Reconstruction ended and "home rule" in the South was restored, white supremacists moved to strip African Americans of the vote and the ability to hold office, lynched many hundreds of black men and women who stood accused of violating white norms, and installed a regime of racial subordination and separation that we have come to call "Jim Crow." This was the new age of racism and imperialism that left its stains not only in the United States, but over much of the globe.

Later generations of African Americans, it was clear, would have to fight anew for the rights and opportunities that had been made possible and then cast into jeopardy. Yet they would fight with the moral bearing, political confidence, and strategic weapons—and with the constitutional language—that their forebears had achieved in their battles to crush slaveholding rebels militarily and to abolish slavery during what we have come to call the Civil War.

The difference would be enormous. They began to build their own cultural and educational institutions that would serve as foundations for subsequent struggles. They left the South in very large numbers (1916–30) at a time when the Ku Klux Klan had a massive popular following across the country and helped turn the New Deal in a progressive direction (avoiding an American fascism). They challenged the federal courts on the constitutionality of "separate but equal." They mobilized hundreds of thousands of black Americans and white allies to tear down the edifice of Jim Crow. And their vision for a just and more equitable society remains on our political agenda.

The Civil War was, of course, very costly. The great loss of life, the profound social dislocations, and the searing pains that almost all American families endured at the time left deep scars and had tragic features. Yet, in historical perspective, the real tragedy would have been a war not fought or a war not won. **R**

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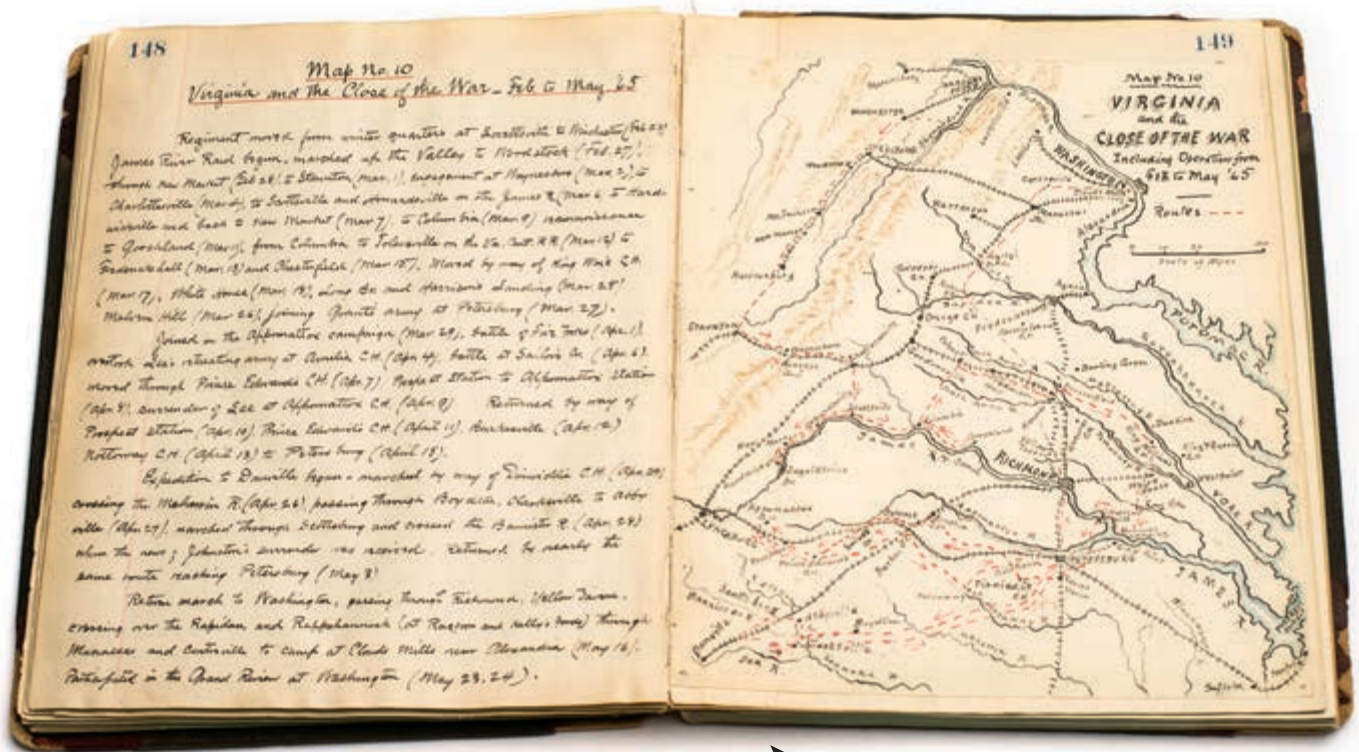
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between big landed interests in the south and west and big industrial and financial interests in the northeast and Midwest: an American version of the German marriage of "iron and rye" linking Prussia and the Ruhr. It might have had a multitiered structure of civil and political standing and rights, determined and administered chiefly by the states and localities, in which blacks and other ethnic groups were officially second-class citizens or noncitizens, and in which democratic practices built up over decades were substantially rolled back.

This, after all, was already happening in the 1850s in relation to both African Americans and Irish immigrants. And, the United States might have had a system of national social separation in which the burdens of providing basic social services rested mostly on the shoulders of various subject populations: something of an American version of apartheid.

That outcomes such as these did not come to pass owed chiefly to a militant antislavery movement committed, at the very least, to checking the power of slaveholders in the United States. When, in the winter of 1860–61, efforts were being made to effect yet another compromise, this involving the potential expansion of slavery into some of the western territories, Lincoln and his Republican allies put their foot down and ensured that a moment of truth over the question of slavery would have to be confronted.

But even more consequential were the activities of the most radical of antislavery's wings: the slaves. Over many years, and in ways their owners (not to mention other white Americans) couldn't understand, the slaves took the measure of American politics and the international struggle over slavery. Many had learned of the great Haitian revolution and of the abolition of slavery in the British and



## Civil War Scenes

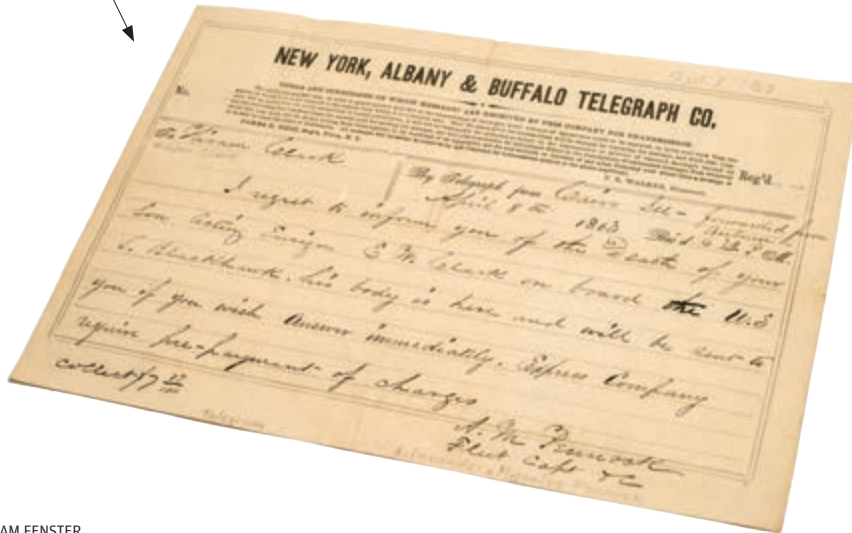
Home to notable collections, including the papers of William Seward, who served as Lincoln's secretary of state, and letters of abolitionist Frederick Douglass, University Libraries also houses a collection of diaries, objects, and other artifacts from the era of the Civil War. Here's a small sample. A fuller slideshow is online at [www.rochester.edu/pr/Review](http://www.rochester.edu/pr/Review).

William Carey Morey, namesake of Morey Hall, who left the University as a student in 1862 to serve in the Union Army, kept a diary, including hand-drawn maps. Morey graduated in 1868 and returned to teach from 1872 until 1920.



An April 1863 telegram notified the family of E. W. Clark that the acting ensign had died on board the USS *Black Hawk*, a Union gunship that patrolled the Mississippi River.

In 1893, veterans of Gettysburg were recognized with ribbons marking the 30th anniversary of the battle.



Abraham Lincoln, photographed by Matthew Brady, 1863.

In addition to the papers chronicling William Seward's service in Lincoln's cabinet, the collection includes other objects, such as this photograph of Lincoln taken by Civil War photographer Matthew Brady.





# ON CEMETERY RIDGE

**At the Battle of Gettysburg,  
'moments seemed like ages,'  
according to Rochester  
graduates who were there.**

**By Bob Marcotte**

# A

S CAPT. WINFIELD SCOTT LOOKED OUT across the Pennsylvania farm fields that hot afternoon in July 1863, he saw a sight “grand beyond description.” In the distance, line after line of enemy soldiers stepped into view, their guns and bayonets gleaming in the sunlight. They looked like “a stream or river of silver moving toward us.”

The Class of 1859 graduate—a Syracuse minister who left the pulpit to wield a sword—was at “ground zero” for one of the most dramatic, defining moments of the American Civil War: Pickett’s Charge at the Battle of Gettysburg.

Scott’s former University classmate, Lt. Col. Francis Pierce, Class of 1859, 1862 (AM); another University graduate, Capt. John Ronald Leslie, Class of 1856, 1860 (AM); and a University undergraduate, Lt. Samuel Porter, Class of 1864, were also in the Union ranks on Cemetery Ridge that day, bracing for the onslaught of 12,000 southern soldiers whose desperate charge marked the high tide of the Confederacy.

University alumni, students, or former students enlisted in at least 12 of the Union regiments that fought at Gettysburg. Their own accounts and those of their contemporaries put them in the thick of the fighting on all three days and in nearly every key part of the battle that took place 150 years ago this summer.

“A great basin lay before us full of smoke and fire, and literally swarming with riderless horses and fighting, fleeing, and pursuing men,” former University student Lt. Porter Farley—Samuel Porter’s cousin—later wrote. “The air was saturated with the sulphurous fumes of battle and was ringing with the shouts and groans of the combatants. The wild cries of charging lines, the rattle of musketry, the booming of artillery, and the shrieks of



# Rochester at the Turning Point

For three days in July 1863, the fields outside Gettysburg, Pa., were “ground zero” for some of the defining moments of the Civil War. And Rochester graduates and students were there. Capt. Winfield Scott and his classmate Lt. Col. Francis Pierce were joined by another Rochester graduate, Capt. John Ronald Leslie, and an undergraduate, Lt. Samuel Porter, in the Union ranks on Cemetery Ridge when the Union repelled the 12,000-soldier onslaught of Pickett’s Charge, the failed assault that marked the high tide of the Confederacy. At least seven Rochester alumni, students, and former students were at Gettysburg. They were among about 85 Rochester students and alumni who fought for the Union during the Civil War.

SEMINARY RIDGE

July 3

## Pickett’s Charge

Stymied on the left and right, Confederate Gen. Robert E. Lee gambles on an all-out – and ultimately disastrous – attack on the center of the Union line.

July 2

## A Mean Right Hook

The Confederates launch a coordinated assault on the weakly defended Union left. Belatedly recognizing the importance of the area’s high ground, Union units scramble to piece together a defense on Little Round Top.

Approximate position of the Union line on July 3, 1863.

## 20th New York Militia

Over the course of three days, a total of 170 of the unit’s 287 men engaged in the battle were killed, wounded, or missing. On the first day it was part of a hastily assembled screen that slowed the Confederate advance west of Gettysburg. On the third day it participated in the repulse of Pickett’s Charge on Cemetery Ridge.

Little Round Top

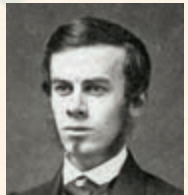
Big Round Top

## 140th New York Infantry

Rushed into position on Little Round Top at the height of the fighting on the second day, the unit’s appearance – and unorthodox counterattack – was instrumental in the defense of the exposed Union left flank.



Capt. Elwell Otis  
(Class of 1858)



Lt. Porter Farley



**July 1**

### The Accidental Battle

Confederate troops approaching Gettysburg from the west unexpectedly collide with Union cavalry. As word of the engagement spreads, the main armies converge: Confederate from the west and north, Union from the south.

TO HARRISBURG (38 MILES) ↘

GETTYSBURG

Cemetery Hill

Culps Hill

#### 126th New York Infantry

Made up of recruits from Ontario, Genesee, and Yates counties, the regiment fought on the second and third days of the battle, assisting in the repulse of Pickett's Charge from a position on Cemetery Ridge.



Capt. Winfield Scott  
(Class of 1859)

#### 108th New York Infantry

Organized at Rochester in August 1862, the regiment participated in the Battle of Antietam less than a month later—and then every major engagement in the eastern theater until the surrender of Robert E. Lee's army at Appomattox.



Lt. Col. Francis Pierce  
(Class of 1859)



Lt. Samuel Porter  
(Class of 1864)

TO BALTIMORE (50 MILES) ↘

#### 60th New York Infantry

Taking up an entrenched position at the extreme right flank of the Union line, the regiment was one of five that held off attacks by an entire Confederate division on the second day of the battle.



Col. Abel Godard  
(Class of 1859)

N



the wounded were the orchestral accompaniments of a scene very like hell itself.”

Founded in 1850, the University was still very much a fledgling institution when the Civil War began. It boasted an enrollment of only about 165 students and a faculty of seven in 1861. That fall it moved from cramped quarters in the former United States Hotel in downtown Rochester to a new building at what became the Prince Street campus.

University President Martin Anderson “had adopted a moderate, almost a neutralist posture on the North-South controversy and abhorred extremism on either side,” University historian Arthur May writes. But Anderson quickly abandoned that stance after Fort Sumter was fired upon in April 1861.

**W**

AR IS A DREADFUL THING, Anderson said at a mass meeting in Rochester a few nights later, “and yet there was something worse—the loss of national honor.” He supported the war effort wholeheartedly, even though it took a toll on his school in many ways.

Anderson released professor Isaac Quinby, a West Point graduate and Mexican War veteran, to command the first of Rochester’s volunteer infantry regiments to serve in the Civil War.

He supported students who put aside their books to join the army, even though it meant a “near fatal” decline in the University’s enrollment, May writes. By the end of the war, enrollment had dropped to only 108 students—in part because even prospective students such as J. Horace (Hod) McGuire were lured into the ranks before ever entering the classroom.

McGuire, who had qualified for a four-year scholarship at the University, later recalled that amid the “war excitement” of July 1862, “it became evident that every young man who could must enlist.”

Anderson “told us boys that in his opinion the war could not last six months and if we felt called upon to enlist to do so and if we came home alive the University would in some way make up our time lost.”

And so they went.

At least 85 of the University’s 198 graduates or former students served in the Civil War. According to May, one out of every 12 undergraduates also enlisted.

Most served in New York regiments, but others enlisted in Wisconsin, Michigan, Kansas, Iowa, Illinois, Massachusetts, Minnesota,

**At least 85 of the University’s 198 graduates or former students served in the Civil War. Most served in New York regiments, but others enlisted in Wisconsin, Michigan, Kansas, Iowa, Illinois, Massachusetts, Minnesota, Ohio, and Washington, D.C. At least one is known to have served the Confederacy.**

Ohio, and Washington, D.C. At least one is known to have served the Confederacy.

At least 34 achieved the rank of captain or better. Ten of them gave their lives.

They did not always agree on what they were fighting for. Pierce, for example, was outraged when Lincoln issued the Emancipation Proclamation. “I will not jeopardize my life or become an invalid for life from exposure and fatigue . . . simply to restore 3,000,000 of brutes to freedom,” he wrote to a friend.

Porter wrote to his father that he had “got tired of listening to the rant and treason of Lieut. Colonel Pierce and men of his stamp.” And yet Pierce and Porter fought with equal valor; each was wounded four times, but served to the war’s end.

By the summer of 1863, Robert E. Lee and his Army of Northern Virginia had repeatedly baffled Union attempts to capture Richmond. And yet, the Confederacy was in peril. Grant’s siege of Vicksburg, the South’s principal stronghold on the Mississippi River, threatened to split the rebelling states.

Many Confederate cabinet members wanted to send reinforcements from Lee’s army to help lift the siege. Instead Lee convinced them there was more to be gained by letting his army invade northern soil.

As Lee’s 75,000 veteran soldiers disappeared behind a screen of mountains and headed north into Maryland and Pennsylvania, upward of 90,000 Union soldiers of the Army of the Potomac pursued, marching as many as 20 or more miles a day along hot, dusty roads.

Just ahead lay Gettysburg, from which 10 roads extended “to as many disparate points of the compass, as if it were probing for trouble in all directions,” Civil War historian Shelby Foote wrote.

When a column of footsore Confederate infantry moved east toward the town on July 1, 1863, ostensibly in search of shoes, a line of dismounted Union cavalry blocked their way. The fighting quickly escalated, drawing additional units from both armies.

Eventually the Confederates were able to extend their lines beyond and around the flank of the Union positions. By the time the rest of the Union army arrived, a defensive line had been established, extending from Culp’s Hill on the east, west to Cemetery Hill, and south along Cemetery Ridge toward two hills called the Round Tops.

Late on the second day, Union reinforcements, including Capt. Elwell Otis, Class of 1858, Farley, and their comrades of the 140th New York, were rushed to defend Little Round Top, a rocky hill critical to the Union position. As the Confederates continued to attack along the Union line to the right, Scott and his regiment helped repulse a Mississippi brigade in bitter fighting along Plum Run in front of Cemetery Ridge.

At the other end of the Union position, a Confederate division advanced at dusk against Culp’s Hill, where only a single Union brigade of five regiments—including the 60th New York, commanded by Col. Abel Godard, Class of 1859—remained. They, too, stood their ground, trading volleys for four hours in the darkness, even when their ammunition briefly ran out.

The next day, Lee launched an all-or-nothing attack with the last of his reserves. For more than an hour, shot and shell rained down on the part of the line held by Pierce, Porter, and the rest of the 108th New York. Pierce, in acting command of the regiment, took command of four additional regiments when their brigade commander was wounded.

When the barrage abruptly ceased, an eerie silence fell. The 108th and 126th New York regiments were posted almost side-by-side



near Cemetery Hill. Two former University classmates, Pierce of the 108th and Scott of the 126th, locked arms and walked behind the two regiments.

“Well, Scott, we have sat beside each other in the classroom many a day,” Pierce remarked, “but this is a new experience. This isn’t much like digging out Greek roots.”

Three quarters of a mile away, three divisions of Confederate infantry, totaling about 12,000 men, stepped into the open in front of



Cemetery Ridge. Pickett’s Charge was under way.

For the Union soldiers bracing for the attack, “Moments seemed ages,” Scott recalled. “The shock to the heart and nerve was awful.”

When the Confederates had advanced within 400 yards, the Union artillerists switched to rounds of canister—cylindrical tins packed with metal balls that spewed outward like oversized shotgun pellets. Lines of Union soldiers stood up and began volleying with their rifles. Despite leg and face wounds he had suffered on the first day of fighting, Leslie was back in the ranks with the 20th New York State Militia as it fired into the enemy formations.

The Confederate lines staggered.

“Like a mob they surged, and were ridden upon by officers. They swept round and round in a hopeless mass, as though they were in great conflict of thought and doubt,” Scott wrote.

As the attack collapsed and the defeated Confederates began to stream to the rear, Scott’s regiment swooped in from the side, capturing prisoners and battle flags. Scott suffered two minor wounds at Gettysburg. Pierce was struck by a round that left his arm bruised from elbow to wrist. They were among 23,000 Union casualties during the three days of fighting.

But the toll on Lee’s army was worse. Half of the soldiers in Pickett’s Charge were killed, wounded, or missing, bringing total Confederate casualties for the three days to as many as 28,000.

Lee would never again invade the north.

For many of the University’s former, current, and future students who answered the call to arms, the Civil War was a defining chapter in their lives.

Scott became a Baptist missionary and later purchased the land that became Scottsdale, Ariz., which is named in his honor, as is Winfield, Kan.

Leslie carried a bullet in his hip the rest of his life, but did not let it deter him from continuing his career as a school-teacher after the war.

Pierce, who found army life quite appealing, became a career officer, serving as an administrator for Indian affairs.

Otis, who survived severe face and neck wounds leading the 140th late in the war, ascended to even greater heights as a career officer. He was appointed military governor of the Philippines after the United States gained control during the Spanish-American War, and retired as a major general. He is buried in Arlington National Cemetery.

Godard led his regiment during the campaigns to relieve Chattanooga, and helped capture Atlanta. He emerged from one battle with 11 bullet holes in his uniform and boots but was unscathed. After being discharged, he returned to St. Lawrence County in New York, served as a state assemblyman and senator, and eventually founded a bank.

Farley survived brutal battles that killed or wounded scores of his comrades the following spring. He made it home, only to watch his young wife die in 1866. He eventually found his calling, became a doctor, and wrote extensively about the wartime experiences of his regiment.

Porter died at age 37 of complications from a malarial sickness that, some suspected, may have been contracted during the war. He died within 24 hours of his father.

In 1881, a letter arrived for Hod McGuire, who had enlisted instead of attending the University on a scholarship. The University’s president, Martin Anderson, had assured him, the war would probably be over in six months.

Instead, McGuire was not discharged until September 1866—more than four years after he enlisted, and nearly a year and a half after the war ended. By then he was engaged to be married. With a wife to support, he took a succession of jobs to make ends meet before studying law with a local attorney and passing the bar exam. He became a very good lawyer, which, he later wrote, excited the envy, even enmity, of others in the profession who had gone through law school.

He was “greatly surprised” when he read the letter.

“I remember distinctly the time you left Rochester to go into the Army. Since then I have watched your course with interest and satisfaction. I feel great pleasure therefore in recommending you as a Candidate for the Bachelor’s Degree. When the next General Catalogue is printed your name can be put with your old class (1866) or remain where it is as you shall choose.”

It was signed by Martin Anderson. 

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*Bob Marcotte writes about the Hajim School of Engineering for University Communications. He is the author of Where They Fell: Stories of Rochester Area Soldiers in the Civil War (Q Publishing).*



**RISK-TAKER:** Scientific innovation requires bold experimentation, says Chu, who shaped the Advanced Research Projects Agency-Energy, a Department of Energy initiative modeled on a similar agency at the Department of Defense, to fund ambitious research.



# POWER AND POLITICS



With Bell Laboratories as his model,  
Steven Chu '70 sought change  
at the Department  
of Energy.

Interview by Karen McCally '02 (PhD)



# W

HEN PRESIDENT BARACK OBAMA NOMINATED Steven Chu '70 to become secretary of the U.S. Department of Energy in January 2009, the appointment of the 1997 Nobel laureate signaled a commitment to science and a sustainable energy policy.

In his post, which he occupied until last month, Chu delivered a focused message: that the reality of climate change, and the role of carbon emissions in producing it, is well established; that rising energy demands, particularly from China and India, are likely to cause oil prices to spike in the coming decades; and that for this combination of environmental and economic reasons, the United States must invest far more resources in developing renewable energy sources.

Chu carried out what's been called an "all of the above" strategy, stressing that fossil fuel development would remain part of the nation's energy mix, alongside renewable power resources such as solar and wind, nuclear power, and biofuels.

But behind the scenes, there's little question that his personal energies have been focused on energy innovation, particularly in the development of renewables. The department's solar energy program, a program that's existed since the department's birth in 1977, but long on the fringes of the agency's priorities, has been placed on a more solid financial and institutional foundation under Chu's leadership.

And in January, Chu addressed one of the last remaining barriers to developing an economy based fully on renewable energy, with the creation of a \$120 million Critical Materials Institute to develop a stable and mass supply of the rare earth metals required to produce solar panels, wind turbines, and other elements of a renewable energy infrastructure.

Much of the new work in the department takes place under the auspices of the Advanced Research Projects Agency-Energy, or ARPA-E, an initiative to fund high-risk, but potentially high-reward, innovations in energy technology. Authorized in 2007, but not funded until 2009, ARPA-E, as it exists today, is largely Chu's creation. He's shaped it in accordance with lessons he learned as a physicist at Bell Laboratories in the 1980s. That's where Chu conducted his Nobel Prize-winning research, on using lasers to trap and cool atoms, as well as the birthplace of the transistor, communications satellites, cellular telephones, and other landmark technological innovations of the last century.

This month, Chu returns to Rochester to address the graduates of Arts, Sciences & Engineering during the University's 163rd commencement ceremonies, where he will also receive the University's George Eastman Medal. Then, he will return to teaching and research, rejoining the faculty of Stanford, where he taught from 1987 to 2008. He'll be the William R. Kenan Professor of Humanities and Sciences and will hold a joint appointment in physics and the medical school's molecular and cellular physiology department.

In March, from his office overlooking the National Mall, Chu discussed some of his work over the past four years.

### **What's the federal role, and the role of research universities, in shaping energy policy?**

The federal government has always been the main funder of basic research in science in general, and the science and engineering related to energy. Much of the science and engineering related to energy actually starts in more fundamental research in science,

and then one can realize later what its applications might be. The federal government also directs funding for projects—how to try to develop a better way of capturing the energy of the sun, for example. Much of what the federal government has funded is research in universities. This funding has a dual purpose in that it also trains graduate students, postdocs, and, increasingly, undergraduates who start to do research in these federally funded labs.

### **It's been written that your experience at Bell Labs has inspired much of your work as energy secretary. Is this true and if so, in what ways?**

It's a model, and it's certainly the way, consciously, I set up ARPA-E. What you had at Bell Labs is a bunch of scientists who were crammed in very close quarters. You didn't just mind your own business and do your own research. You were always talking and learning about other people's work. But the most interesting part of that is, let's say you're representing your people, and you say something and I don't agree. There would be an open discussion. It keeps everybody honest. Instead of each person waiting politely to take their turn, there's an open, free discussion where everything's fair game, but it's not personal. Sometimes people ask in a not-so-nice way—there was one person at Bell Labs famous for getting up at seminars—this big, tall guy, and saying—'What the hell are you doing that kind of crap for?' This could unnerve people. What it really meant was, 'Tell us the importance of what you're doing. We just learned you succeeded. What's the fundamental importance?' You were always being challenged by your colleagues—in seminars, in discussions after seminars, at lunch tables. It was what a friend here, whom I recruited, called 'constructive confrontation.' It was a very flat organization. You were judged by the value of your ideas.

### **The culture in Washington is not noted for "constructive confrontation." Have you found the transition difficult?**

Well, it depends on what culture you're talking about. Within ARPA-E, we created a culture of constructive confrontation. And it's the closest thing to Bell Labs that I've seen outside of Bell Labs. It is more like Bell Labs than a university. At a university, when people say, 'I have a new idea and I would like to get funding,' you write up a proposal and you'll be lucky if you get it in one year. Typically it's a year and a half, two years, before you can even start. At Bell Labs and now at ARPA-E, you go to a manager and talk about it. The manager might say, 'I don't think I believe this.' You'd say, 'Let's go work it out on the board.' Your boss can engage with you on a fine detail. But you don't get an answer in a year. You can get an answer that day or that week. And if you don't like the answer, you can appeal it up to a point.

Now in terms of political confrontation, the amazing thing is, at some level, even though they have to do the theatrics in front of the camera, some of my good allies are actually across the aisle. Much of what I've done is about science and not politics. Perhaps 98 percent of my job has nothing to do with that political sort of confrontation. Now, what the public sees, is what it sees.

### **How has ARPA-E helped advance solar energy?**

We recruited Ramamoorthy Ramesh from the physics department at Berkeley to head ARPA-E's solar photovoltaic program. He went off and started to revitalize the program, which Arun Majumdar, the director of ARPA-E, named the SunShot program. And it turned out that a crew of four scientists transformed the solar program. All of a sudden, people from universities were coming

**FUNDAMENTALS:** “Much of the science and engineering related to energy actually starts in more fundamental research in science,” says Chu, who has rejoined the faculty of Stanford University after four years as energy secretary.

to me, unsolicited, and saying, ‘Your solar program is transformed. You’re funding all the good stuff. You used to fund not-so-good stuff. It’s very exciting.’ One star professor at Caltech said, ‘Because of this SunShot program—and now the students have noticed this—I have more applicants, I have the crème-de-la-crème pick of graduate students at Caltech who want to go in my group and work on solar, because the funding agent is making all the right decisions. So three to four in a division created that with constructive confrontation.

Now outside of that group, I have to do a lot of blocking and tackling. Behind the scenes I say, ‘Don’t hassle these guys.’ Congressional affairs didn’t want Arun to talk to Congress, for example. I said, ‘No. Arun can talk to Congress. He can talk directly. Don’t muzzle him.’ And he turned out to be one of our best spokespeople for the program.

So that’s a culture we’ve created within the agency. But the larger issue of how deals are not made in Congress? That part is frustrating.

**You’ve often said that scientific innovation requires a long timeframe and tolerance for failures along the road to breakthroughs. How has failure played a role in your career as a scientist?**

If you plan a program where you don’t fail, that tells me instantly that you’re not reaching far enough. There’s a quote from Michelangelo that I like to cite. He said, “The greater danger for most of us lies not in setting our aim too high and falling short; but in setting our aim too low, and achieving our mark.”

This is something I learned as a graduate student. I worked on three projects before I landed on a thesis. One could say they were incompletes or failures, but certainly incompletes. But I landed on a project and said, ‘OK, this is it.’ And then focused very much on that. But if you consider the overall picture, you could say, ‘Well, you started this, you didn’t finish; you started another thing, you didn’t finish; what’s going on?’ Yet after I was a graduate student and a postdoc, the physics department at Berkeley wanted me to join their faculty. So I wasn’t a total failure.

So how did this happen, after only one success out of four? It’s



because when I failed, I moved on, and I moved on quickly, number one. Number two, what I did do was of some note. And number three, when I failed, I looked at the heart of the problem and said, ‘If this doesn’t work, the path going forward is not going to work.’

I had a similar success rate at Bell Labs and at Stanford. At Bell Labs, there were times I would be working on a project for two or three years, and the people there would get a little anxious and say, ‘Look, this could ruin your career if this thing doesn’t work.’ I’d say, ‘It’s OK, I have one or two more ideas. If that doesn’t work, I’m out.’

But you have to get an inner sense of what will work and what doesn’t. **B**









▲ **Physical World:  
Category Winner**

**SLOVAKIA**

*The High Tatras*

**Michael Shteyn** '13, a neuroscience and philosophy major from St. Louis. *September 2012*

◀ **People:  
Category Winner**

**EGYPT**

*Tahrir Square*

**Dillon Bowman** '15, an international relations major from Yardley, Pa. *November 2012*

▶ **Culture:  
Category Winner**

**INDIA**

*Chlorination*

**Rebecca Baer** '13, an ASL and anthropology major from Denver. *July 2012*

# Global Outlook



## Students share their photos in the fifth annual *Rochester Review* Study Abroad Photo Contest.

For the fifth edition of our annual Study Abroad Photo Contest, we received just over 200 photos from 55 students who took part in academic programs sponsored by the College Center for Study Abroad and Interdepartmental Studies during 2012.

Submitted in the categories of culture, people, and physical world, the photos were taken in 43 countries, representing five continents.

For the second year, we worked with the International Services Office and the Office of the Dean of the College to invite international students to submit their photos of the United States.

This year's grand prize winners receive a \$100 gift certificate to the University bookstore.

Students who win categories and who earn honorable mention also receive prizes. ®

—Scott Hauser

**People: Honorable Mention**

**GREENLAND**

*Dogsledding*

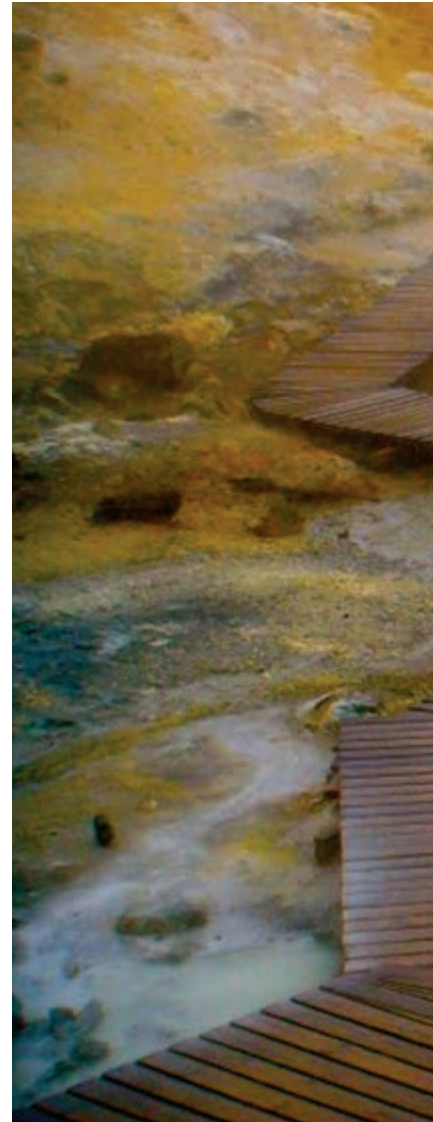
**Matthew Shulman '13**, a sustainable development major from Washington, D.C. *March 2012*

▶ **Grand Prize: Study Abroad**

**ICELAND**

*Steaming Sulfur Pits*

**Matthew Shulman '13**, a sustainable development major from Washington, D.C. *May 2012*



▶ **International: Honorable Mention**

**CHICAGO**

*Sage & Nature*

**Boao Song**, a materials science graduate student from Beijing. *November 2012*







◀ **People:  
Honorable Mention**

**INDIA**

*Delhi Traffic*

**Meridel Phillips** (T5), a physics and English major from St. Louis Park, Minn. August 2012









◀ **Physical World:  
Honorable Mention**

**CHILE**

*Los Cuernos (The Horns)*

**Sarah Milligan '13**, a Spanish and health, behavior, and society major from West Seneca, N.Y. December 2012

**Culture:  
Honorable Mention**

**INDIA**

*Wishes on the Ganges*

**Rohini Bhatia '13**, an epidemiology major from Ellicott City, Md. October 2012



◀ **Culture: Honorable Mention**

**JORDAN**

*Professional Mancala*

**Dillon Bowman '15**, an international relations major from Yardley, Pa. June 2012

**Thanks to Our Judges**

Our panel of judges included Allen Topolski, professor and chair of the Department of Art and Art History; Brandon Vick, digital assets manager for University Communications; and Shannon Taggart, a freelance photographer based in New York City and a former University photographer.

Jacqueline Levine '80, '84 (Mas), director of the Center for Study Abroad and Interdepartmental Programs, and Sylvia Kless '91W (MA), who retired this spring as associate director of the International Services Office, helped coordinate the contest.

For more about study abroad, visit [www.rochester.edu/College/abroad](http://www.rochester.edu/College/abroad). For more about international study, see [www.iso.rochester.edu](http://www.iso.rochester.edu).

◀ **International: Grand Prize**

**SAN FRANCISCO**

*Morning in San Francisco*

**Alona Kulbabchuk**, a graduate student at the Simon School of Business. April 2012