

# Achievements of Catholic Scientists

Most of the Catholic Scientists listed below lived in 17th through 19th centuries. Many earlier scientists, including scholars associated with establishing the **Scientific Method**, and also those who played a leading role in the field of **Astronomy**, are listed elsewhere.

Up until the Protestant Revolution scientific research in Europe occurred mostly within monasteries, Universities, and institutions of the Catholic Church. During this time the majority of scholars were priests or religious. From the 16th century on the participation of layman in science increased in both Catholic and Protestant countries.

In the centuries following the Protestant Revolt, many institutions dedicated to Scientific research came under the control of the Jesuit order and from that time on, the Jesuits dominated scientific research in most Catholic countries.

A longer list of both **Lay Catholic** and **Catholic Cleric** Scientists can be found on Wikipedia.

## Mathematical Philosophers

**Pope Sylvester II**  
*(c. 946–1003)*

Prolific French scholar, also known as Gerbert of Aurillac. Greatest scholar of his age. Promoted Arabic knowledge of arithmetic, mathematics, and astronomy and introduced Arabic (decimal) numbers into Europe. He inspired learning in Medieval France especially at monastery schools.

**Leonardo Fibonacci**  
*(c. 1170–c. 1250)*

Layman mathematical scholar who popularized Hindu-Arabic numerals in Europe and discovered the Fibonacci sequence.

**Rene Descartes**  
*(1596–1650)*

French philosopher, mathematician and scientist. Philosophical works explore rationalism and skepticism, and are foundational to modern western philosophy. Descartes also developed the Cartesian co-ordinate system and wrote on analytic geometry.

**Pierre de Fermat**  
*(1601–1665)*

Number theorist who contributed to the early development of calculus. Famous for 'Fermat's Last Theorem, a mathematical conundrum for over 300 years.

**Paolo Casati**  
*(1617–1707)*

Jesuit mathematician who wrote on astronomy, meteorology, and vacuums; published "Terra machinis mota" (1658), a fictional dialogue between Galileo, Paul Guldin and father Marin Mersenne on cosmology, geography, astronomy and geodesy.

**Blaise Pascal**  
*(1623–1662)*

French mathematician, physicist, inventor, writer and philosopher. Invented the first mechanical calculator and wrote 'Pensees', a classical work of Catholic apologetics.

# Catholic Scholars in Life Sciences

## ANATOMY and PHYSIOLOGY

**Andreas Vesalius**  
(1514–1564)

Published landmark books on human anatomy ("On the Fabric of the Human Body") using woodcuts and other prints that clearly illustrated systems of the human body for the purpose of medical instruction. Known as the father of Anatomy he also did important work in correcting some of Galen's misrepresentations regarding the human circulatory system.

**Hieronimus Fabricius**  
(1537–1619)

Medical scientist who revolutionized the field of anatomy by holding public dissections for the purpose of instruction. In his dissection of animals he studied the formation of fetus and embryology. William Harvey and other famous medical researchers of the age were his students.

**Claude Bernard**  
(1813–1878)

Catholic experimental physiologist in a skeptical age, who promoted adopting scientific methodology to medicine. He developed blind experiments to ensure objectivity, and advanced the fields of physiology and homeostasis.

## GERM THEORY

**Athanasius Kircher**  
(1602–1680)

Jesuit Polymath, called the father of Egyptology. One of the first people to observe microbes through a microscope; in his *Scrutinium Pestis* of 1658 he noted the presence of "little worms" or "animalcules" in the blood, and concluded that the disease was caused by micro-organisms.

**Louis Pasteur**  
(1822–1895)

French microbiologist known for his work on vaccines, fermentation, and pasteurization process to remove microbes from food. Pasteur disproved the theory of spontaneous generation, created vaccines for rabies and anthrax, greatly advanced germ theory, and made notable discoveries in chemistry. He is known as the father of microbiology.

## GENETICS

**Gregor Mendel**  
(1822–1884)

Augustinian monk who did experiments cross-breeding pea plants and established the rules of heredity and the science of genetics. The significance of his work was not recognized until the early 20th century almost sixty years after it was published.

# Catholic Scholars in Physical Sciences

## OPTICS

- Theodoric of Freiberg**  
(c. 1250 – c. 1310) Dominican theologian and physicist who gave the first correct geometrical analysis of the rainbow.
- Francesco Grimaldi**  
(1618–1663) Jesuit who discovered the diffraction of light (indeed coined the term "diffraction") and was an important influence on Newton. Investigated the free fall of objects, and built and used instruments to measure geological features on the moon.

## MECHANICS

- Giovanni di Casali**  
(d. 1375) Franciscan friar who provided a graphical analysis of the motion of accelerated bodies.
- Domingo de Soto**  
(1494–1560) Spanish Dominican priest and professor at the University of Salamanca; in his commentaries to Aristotle he proposed that free falling bodies undergo constant acceleration.
- Giambattista Riccioli**  
(1598–1671) Italian Jesuit who used finely calibrated pendulums in order to measure the acceleration of gravity with extreme precision. He also wrote *Almagestum Novum* (The New Almagest), an illustrated encyclopedia of Astronomy that became a standard reference for the 17th and 18th centuries.

## ATOMIC THEORY, ASTRONOMY,

- Roger Boscovich**  
(1711–1787) Jesuit physicist from Croatia known as the greatest scientific scholar of his age. Known for his contributions to atomic theory and astronomy. His "Theory of Natural Philosophy", published in 1758 proposed the atomic theory of matter fifty years before John Dalton. He also offered a proposal for fixing the Dome of St. Peter's. In astronomy he determined methods for computing the equator of a rotating planet and the path of an orbiting planet from three observations.

## ELECTRONICS

- Charles-Augustin Coulomb**  
(1736–1806) French physicist known for developing Coulomb's law, stating the force between charged particles varies with the distance squared.
- Alessandro Volta**  
(1745–1827) Italian Physicist and chemist known for the invention of the electronic battery, and also the discovery of Methane. The metric unit of Electric potential is named for him.
- Andre-Marie Ampere**  
(1775–1836) Italian physicist who was one of the main discoverers of electromagnetism. The unit of electronic current is named after him.

## CHEMISTRY

**Berthold Schwarz**

*(c. 14th century)*

Franciscan friar and reputed inventor of gunpowder and firearms.

**Joseph Gay-Lussac**

*(1778–1850)*

French chemist and physicist known for two laws related to gases.

**Antoine Lavoisier**

*(1743–1794)*

Father of modern chemistry. Discovered oxygen and laid the foundations of modern chemistry, but was executed by guillotine during the French Revolution.

**Eugenio Barsanti**

*(1821–1864)*

Piarist Monk, invented the internal combustion engine twenty years before Nicholas Otto, but died before he was able to put it into production.

## Catholic Founders of New Scientific Fields

**Marin Mersenne**

*(1588–1648)*

ACOUSTICS - Philosopher priest, mathematician, and music theorist, wrote an influential book on musical theory, and is known as the father of Acoustics.

**Nicolas Steno**

*(1638–1686)*

GEOLOGY - Danish Bishop beatified by Pope John Paul II who is credited with establishing the principles geography and stratigraphy. Lutheran convert to Catholicism.

**Georgius Agricola**

*(1494–1555)*

MINERALOGY - German-Catholic scholar and philosopher who wrote "De re Metallica", a famous book on mining and metal-working technology of the 16th century. Known as the 'Father of mineralogy.'

**James B. Macelwane**

*(1883–1956)*

SEISMOLOGY - Jesuit pioneer in the field of seismology (earthquake studies). Served as head of the American Geophysical Union and contributed to the first American textbook on seismology.

**Giuseppe Mercalli**

*(1850–1914)*

SEISMOLOGY - Priest and professor of Natural Sciences who studied volcanos and directed the Vesuvius Observatory. Best remembered today for his Mercalli scale for measuring earthquakes which is still in use.

**Francesco de Terzi**

*(c. 1631–1687)*

AVIATION - Jesuit referred to as the Father of Aviation for his pioneering efforts; he also developed a blind writing alphabet prior to Braille.

**Athanasius Kircher**

*(1602–1680)*

EGYPTOLOGY - Jesuit called the father of Egyptology and "Master of a hundred arts". In addition to studying Egyptian hieroglyphics, he wrote an encyclopedia of China and contributed to the field of microbiology.

**Jose de Acosta**

*(1539–1600)*

NATURAL HISTORY – Jesuit missionary and naturalist who wrote "Natural and Moral History of the Indies" the first detailed and realistic natural histories of the Americas.