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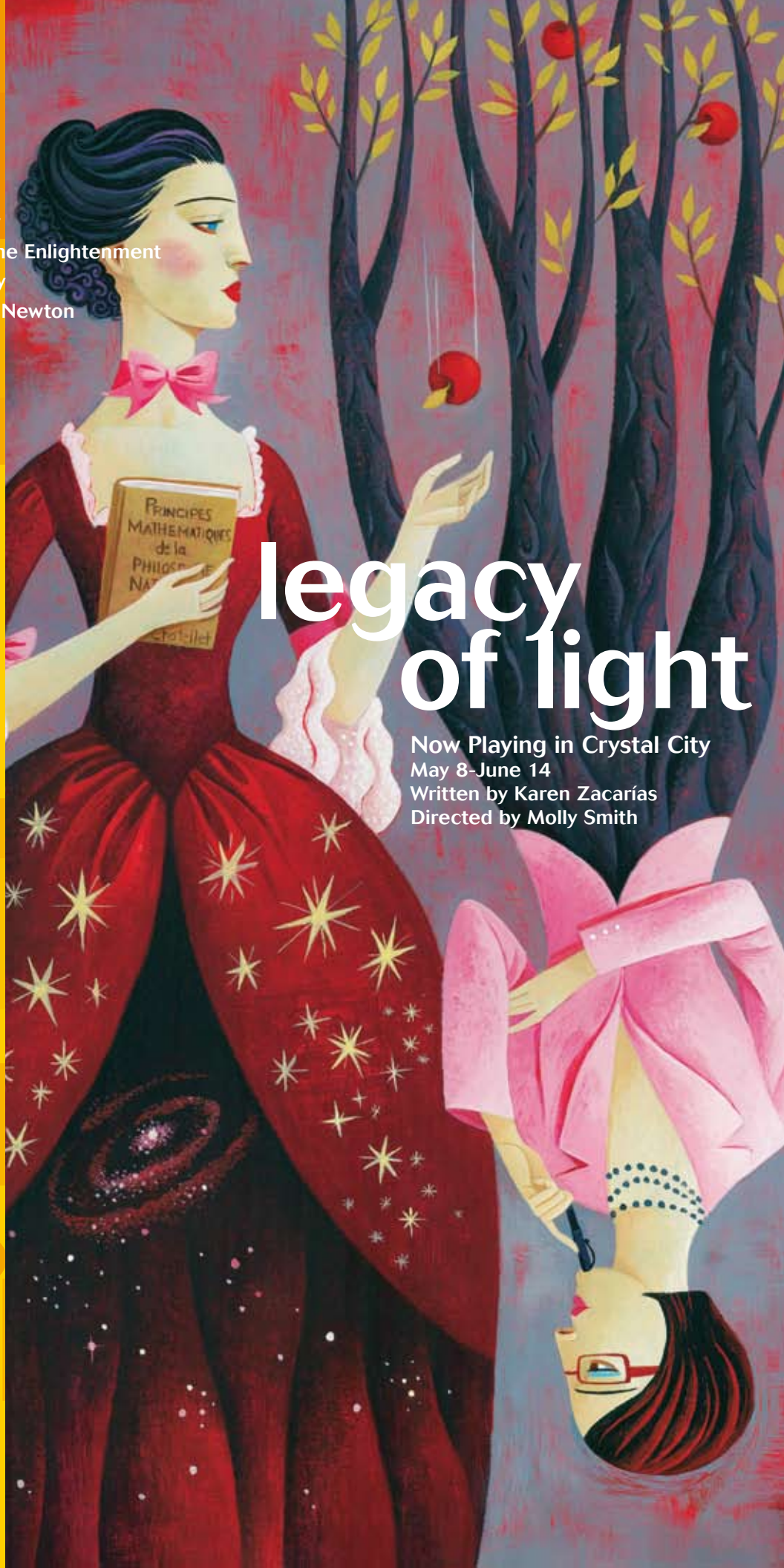
What is a woman's legacy? Is it the discoveries she brings to the world through her career? Is it the children she brings into the world as a mother? Two female scientists in two different centuries struggle with these questions ... and their clocks are ticking.

In 18th-century France, **Émilie du Châtelet** works side by side with her devoted friend and lover **Voltaire** to unlock the mysteries of Newton's physics. In modern-day New Jersey, an astrophysicist named **Olivia** studies the birth of planets while enjoying a private life with her husband, **Peter**.

When Émilie discovers she is pregnant, she is certain she will not survive childbirth. She pushes herself to finish her great scientific work in the nine months she has left to live. Olivia is on the verge of her great scientific discovery but finds herself pulled toward being a mother. Unable to have children of their own, Olivia and Peter turn to **Millie**, a light-filled young woman with a secret, to be their **surrogate**.

As the story unfolds, vast differences and striking similarities emerge between the past and present as questions of art, science, love, family and motherhood forge a connection through the centuries. ●

surrogate mother – a woman who agrees to become pregnant and give birth to a child that she will not raise but hand over to a contracted party, like a couple who cannot have children of their own



legacy of light

Now Playing in Crystal City

May 8-June 14

Written by Karen Zacarías

Directed by Molly Smith

meet the playwright

Karen Zacarías



Mexican-born playwright Karen Zacarías has devoted her life to creating theater for young people. After resisting a career in the arts throughout her adolescence, Zacarías received her master's degree in playwriting from Boston University and began looking for ways to share her talents with children.

In 1995, she founded the Young Playwrights' Theater, an award-winning company that works with students in Washington-area schools to enhance literacy, spark creativity and resolve conflicts through playwriting. Her plays for young people, such as *Ferdinand the Bull* and *Cinderella Eats Rice and Beans: A Salsa Musical*, have enjoyed success throughout the country.

Zacarías has also written a number of plays for adults, such as *An American Home*. Her play *Mariela in the Desert* won the National Latino Playwriting Award and was a finalist for several other prizes. She had three world premieres in 2008: *The Book Club Play* (Round House Theatre), *Chasing George Washington* (Kennedy Center) and *Looking for Roberto Clemente* (Imagination Stage). She lives in Washington with her husband and three children. *Legacy of Light* is a world premiere and dedicated to her mother. ●

Women: Then & Now

Although the women in *Legacy of Light* have similar interests, spirits and struggles, the times in which they live are very different. Life for women has changed significantly from the 18th century to the 21st century.

	18th-century France	21st-century America
Marriage	Women's families chose suitable husbands for them based on social standing. Marriages united families, wealth and power. Most women were married before they turned 20.	Most women are free to date as many men as they wish and marry for love when they decide it is the right time – or not marry at all.
Childbirth	5% of women died in childbirth. Midwives, who were housewives with no formal training, were responsible for helping women give birth. Wet nurses breastfed the babies of upper class women.	0.00013% of women die in childbirth. Highly trained obstetricians deliver babies. Women breast feed their children or use formula.
Domestic life/family	Women stayed home to take care of their children and were often responsible for educating them as well.	Women can work if they choose; working mothers sometimes struggle to balance their professional lives with raising children. Some women feel pressured to "have it all."
Education	Women received no formal education. Any learning had to be pursued independently. Only 25% of women were able to read.	Women can pursue as much education as they wish. 14% more women than men attend college. 99% of adult women can read.
Law/politics	Women were not permitted to vote or run for public office. They were unable to own property or request a divorce. They had no custody rights to their children.	Women are eligible for any public office and have run for president. They are able to own property, get divorced, and have primary custody rights to their children.
Career	Women were unable to pursue any career seriously. Their primary roles were wife and mother. Any art or writing by a woman was typically published under a man's name.	Women may pursue nearly any career they wish. More than 60% of women hold jobs.



Activity! In a small group, brainstorm limitations women still face in America today. Then, predict how they will overcome these limitations and what advancements will be made in the next 100 years.

Real Characters

The characters Émilie and Voltaire are based on real people that lived during the Enlightenment. Émilie du Châtelet and Francois-Marie Arouet (pen name Voltaire) were partners in science, love and life. Together, they wrote *Elements of Newton's Philosophy*. Voltaire said du Châtelet "was a great man whose only fault was being a woman." Voltaire is known for his wit and as one of the greatest French writers and philosophers. ●



Francois-Marie Arouet/Voltaire (1694-1778)



Gabrielle Émilie du Châtelet (1706-1749)

a! Activity! Choose one or two characters from history and write a short story about them. The story can be set in their time or in another setting. Balance facts about them and your imagination to tell a compelling, truthful story.

Historical Context: The Enlightenment

Before the mid-18th century, religion, authority and superstition were the most powerful forces. Born into their positions, royalty ruled over people and country. People believed that God decided people's roles in life before they were born, and, therefore, attempting to better oneself went against God's will. There was little popular regard for science or rational thinking.

Later in the 18th century, however, there was a major shift away from such thinking as artists, scientists and intellectuals came forward, seeking knowledge based on evidence not religion. This era is known as the Enlightenment.

Philosophers, like Voltaire, questioned the social structure, arguing that royalty born into power had no actual merit and, therefore, should not be allowed to govern. People like Voltaire believed that fate did not make rational sense. Instead, they theorized that all humans are born free, equal and able to succeed in life based on individual potential. Where do you recognize this Enlightenment philosophy in the modern world? ●

a! Activity! The Enlightenment helped lay the foundations for the modern world. Research an important figure from the Enlightenment. Write about that person's contributions to their time and the influence their work has had on the modern world.

Commissioning a Play

Arena Stage is committed to expanding the **canon** of American plays and is constantly seeking to introduce new, exciting plays. One major way Arena does this is by **commissioning** plays.

This begins with the theater noticing a talented new playwright or deciding to take on a new play by a well-known writer. First, Arena and the playwright decide what the play should be about. Then, Arena gives the writer a timeline with deadlines for different drafts of the play, and the writing begins. Throughout the process, feedback is given, revisions are made, and there is usually a reading, at which Arena staff and sometimes the public can hear the play read by actors and respond to it.

When it is decided that the play is finished and ready to produce, Arena has the option to either produce the play or release it, which allows the playwright to submit the work to other theaters. ●

canon – a catalog or list, a collection

commissioning – in theater, when a theater contracts a playwright to write a play or musical

a! Activity! In small groups discuss a new story or important issue that should be made into a play. Together, write a proposal of what the play will be about and why the story should be told. As a group, write the two-minute version of the play. When you think the play is ready for production, rehearse it and perform it for your class.



The Science of Isaac Newton

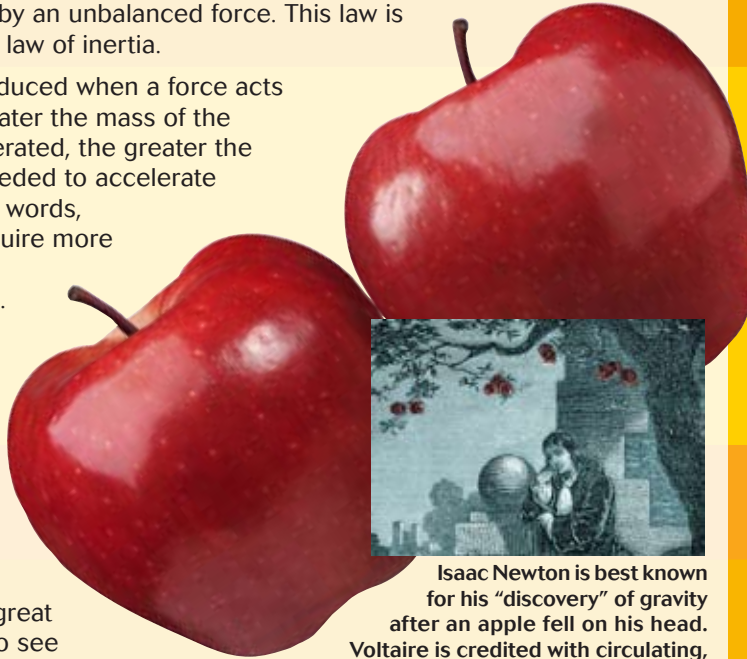


Sir Isaac Newton (1643-1727) laid the foundations for modern science. He invented the first reflective telescope. He discovered that white light contains the full color spectrum. Newton also invented the varieties of math (calculus) needed to prove his scientific theories.

Newton's laws of motion and understanding of gravity helped him accurately predict the motions of the stars and planets. These three laws also gave people a better understanding of the physical world:

1. An object at rest tends to stay at rest, and an object in motion tends to stay in motion with the same speed and in the same direction, unless acted upon by an unbalanced force. This law is often known as the law of inertia.
2. Acceleration is produced when a force acts on a mass. The greater the mass of the object being accelerated, the greater the amount of force needed to accelerate the object. In other words, heavier objects require more force to be moved than lighter objects.
3. For every action there is an equal and opposite reaction.

In *Legacy of Light*, we watch Émilie translate, criticize and interpret Newton's *Principia*, his great work on gravity. We also see Olivia's great scientific discovery – made possible because of Newton's work centuries earlier.



Isaac Newton is best known for his "discovery" of gravity after an apple fell on his head. Voltaire is credited with circulating, if not creating, this story about Newton. During the play, observe how apples are used. Consider what they may symbolize.

Helpful Hints for Theater Audiences

As an audience member at the theater, YOU are part of the show! Just as you see and hear the actors onstage, they can see and hear you in the audience. To help the performers do their best, please remember the following:

Arrive at least 30 minutes early.

Visit the restroom before the show starts.

Before the show begins, turn off your cell phone, watch alarms, pagers, and other electronic devices. If anything rings by accident, shut it off immediately.

Save food and drinks for the lobby. There is no eating or drinking inside the theater.

Walk to and from your seat - no running in the theater!

Do not talk, whisper, sing, or hum.

Keep your feet on the floor, not on the seat in front of you.

Avoid getting up during a show because it distracts your neighbors and the performers. If you must leave, wait for a scene change, then exit quietly and quickly.

Performers appreciate enthusiastic applause rather than whistling or shouting.

Cameras and videotape are prohibited because they are distracting to the performers.

Enjoy the show!



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Visit www.arenastage.org for more information on Arena Stage productions and educational opportunities.

Additional Resources

Books/Plays:

Candide by Voltaire
Extraordinary Women Scientists by Darlene R. Stille
Émilie du Châtelet: Daring Genius of the Enlightenment by Judith P. Zinsser
The Sins of Sor Juana by Karen Zacarias

On the Web:

The Physics Classroom: www.glenbrook.k12.il.us/gbssci/phys/Class/newtlaws/u211a.html
Émilie du Châtelet: the genius without a beard: <http://physicsworld.com/cws/article/print/19569>

Sub/Text

For links and research related to Arena Stage productions, compiled by Arena Stage **dramaturgs**, please visit **Sub/Text: Your Virtual Dramaturg** at www.arenastage.org/season/08-09/sub-text/.

dramaturg – a theater specialist who does research for productions and represents the intentions of the playwright