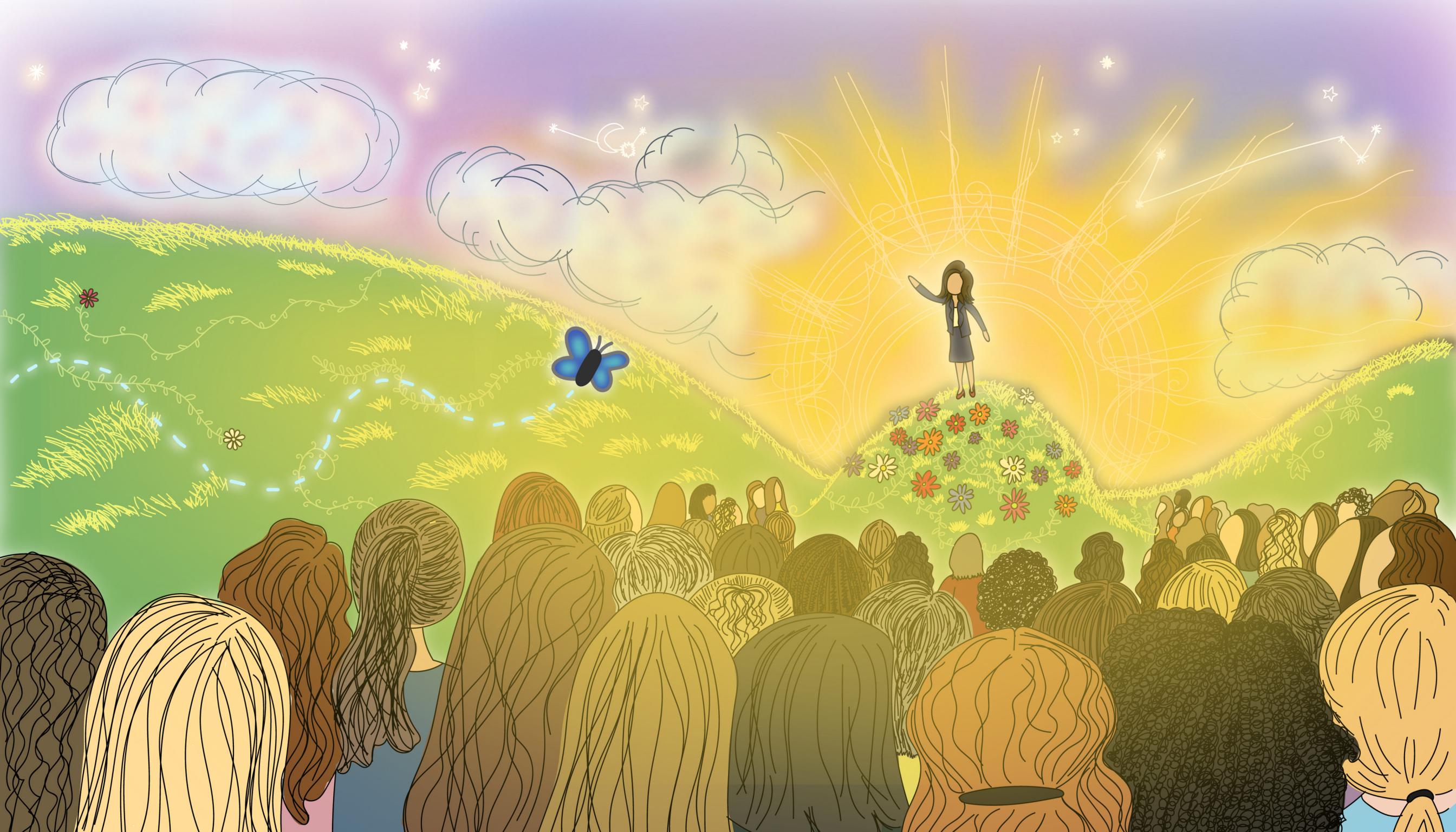


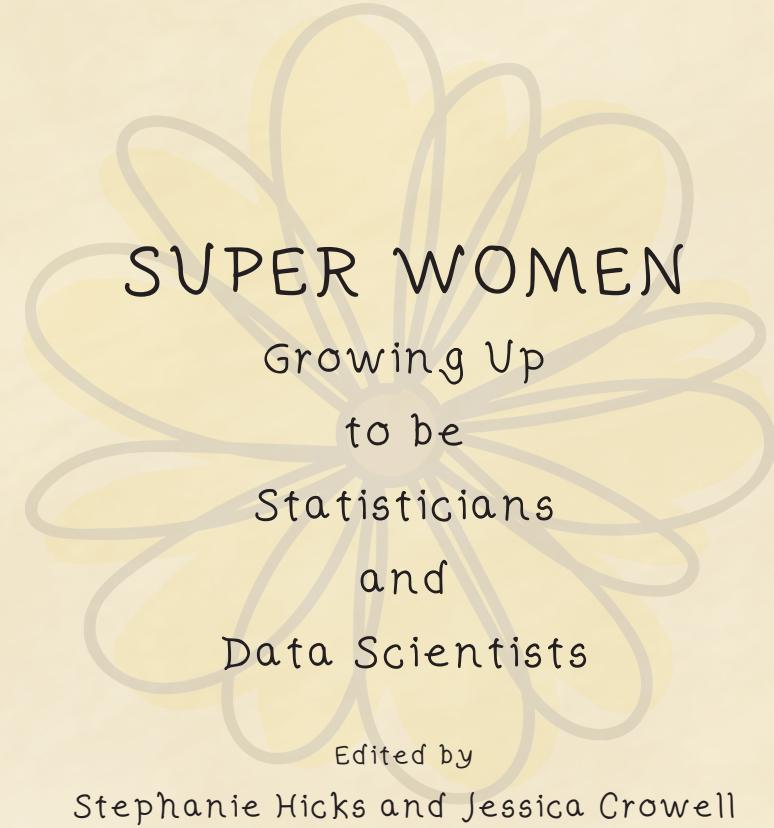
# Super Women

Growing Up  
to be  
STATISTICIANS  
and  
DATA SCIENTISTS

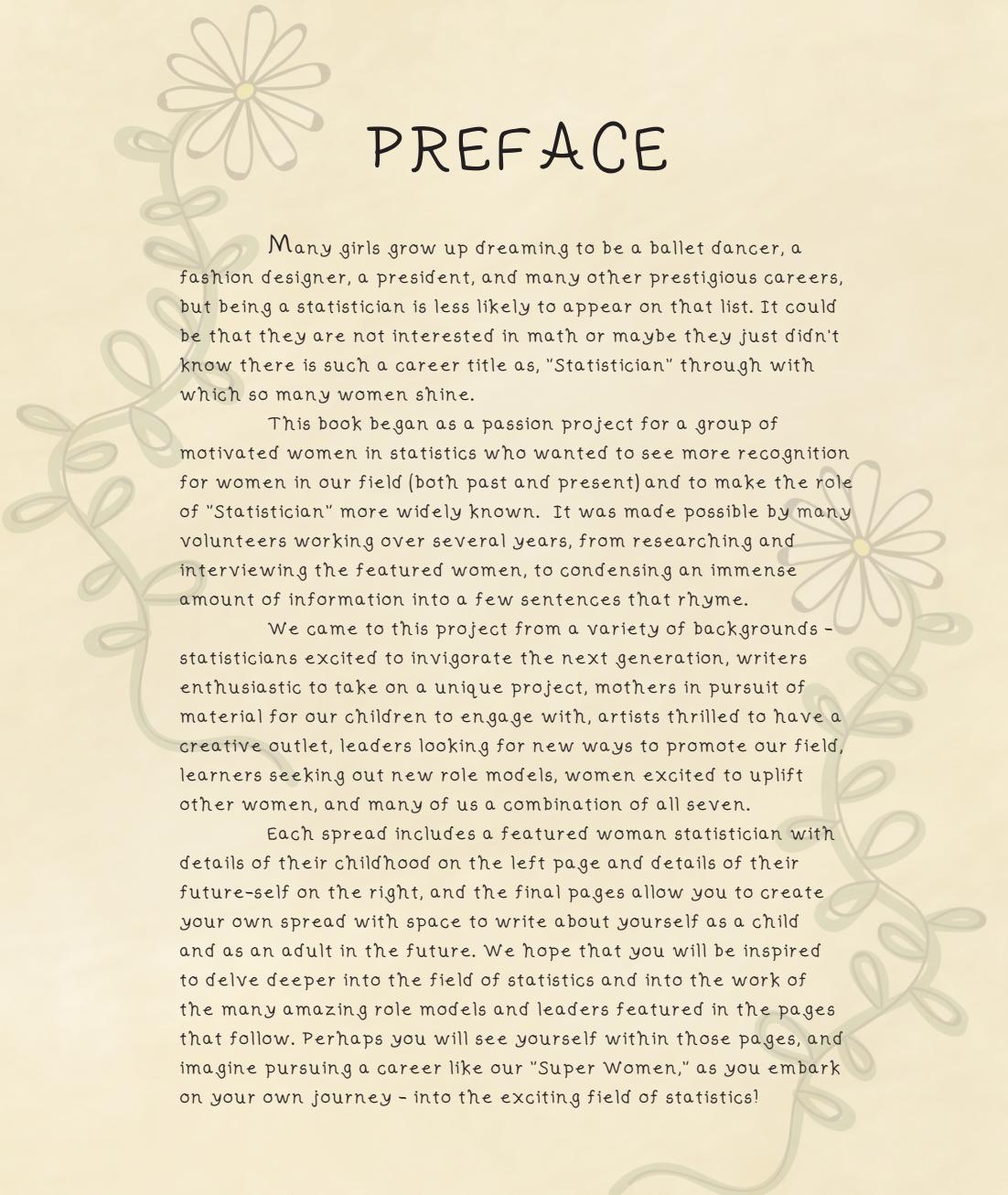




# COPYRIGHT



Illustrated by  
Jessica Crowell



## PREFACE

Many girls grow up dreaming to be a ballet dancer, a fashion designer, a president, and many other prestigious careers, but being a statistician is less likely to appear on that list. It could be that they are not interested in math or maybe they just didn't know there is such a career title as, "Statistician" through which so many women shine.

This book began as a passion project for a group of motivated women in statistics who wanted to see more recognition for women in our field (both past and present) and to make the role of "Statistician" more widely known. It was made possible by many volunteers working over several years, from researching and interviewing the featured women, to condensing an immense amount of information into a few sentences that rhyme.

We came to this project from a variety of backgrounds - statisticians excited to invigorate the next generation, writers enthusiastic to take on a unique project, mothers in pursuit of material for our children to engage with, artists thrilled to have a creative outlet, leaders looking for new ways to promote our field, learners seeking out new role models, women excited to uplift other women, and many of us a combination of all seven.

Each spread includes a featured woman statistician with details of their childhood on the left page and details of their future-self on the right, and the final pages allow you to create your own spread with space to write about yourself as a child and as an adult in the future. We hope that you will be inspired to delve deeper into the field of statistics and into the work of the many amazing role models and leaders featured in the pages that follow. Perhaps you will see yourself within those pages, and imagine pursuing a career like our "Super Women," as you embark on your own journey - into the exciting field of statistics!

# SALLY MORTON

Little Sally rode her orange bike. It was her favorite thing that she liked.



She loved math, and reading books every night.



When her dad came home, she counted all of the change in his pocket to her delight.

Sally is now a woman who shines as a leader. As an executive vice president with a grand vision, she leads statisticians, data scientists, and other researchers - supporting them to achieve their dreams.

She compares studies and combines data to help patients, their families, and doctors make better decisions.



Sally is Executive Vice President of Knowledge Enterprise and Professor of Statistics at Arizona State University. She is a former president of the American Statistical Association.

# GABRIELA DE QUEIROZ



Gabriela grew up in South America in a beautiful country called, Brazil.



With three older siblings, two sisters and a brother, their house was filled.

When she was little she loved playing outside, especially with puppies.



She gained her independence and confidence from her mom, who always encouraged her studies.



Gabriela is a great leader in statistics, computer programming, and in building communities.

It thrills her to help others learn software, so she started a group called R-Ladies, full of opportunities.

This group started small, with just Gabby, one woman.

Now, there are thousands of members, and so many new ideas come in!



Gabriela de Queiroz is an influential leader in the area of Machine Learning and Artificial Intelligence. She is an active member of the R community and the founder of R-Ladies and AI Inclusive.

# GERTRUDE COX

Young Gertrude grew up in the early 1900s in Iowa.

She lived on a farm and worked as a housemother taking care of orphans.

In her free time she loved taking long strolls along the river.



She also enjoyed baking and played basketball in school. All the while, her mother taught her the joy of being a giver.

Gertrude was a teacher, writer, and world traveler.

She designed experiments for answering questions about animals, growing food, and making medicine.

With all that she accomplished, she stayed true to herself, treating everyone as family and continuing to find joy in helping others.



Gertrude founded what is now the Department of Statistics at North Carolina State University in 1941. She was the first woman elected into the International Statistical Institute and served as the President of the American Statistical Association in 1956.



# SCARLETT BELLAMY

Growing up in North Carolina with her grandparents on a farm,



Scarlett loved to ride a pony named Dan and roller-skate on paved roads past the barn.



She always wanted to be a medical doctor, but fell in love with math instead!

She learned the value of hard-work and community,

pushing herself to be an applied mathematics doctor and taking her far from the homestead.



Scarlett leads statisticians to foster diversity in the statistics community,

And her advice to young kids is to take risks and find new opportunities.

She uses statistics to solve important problems in public health, and always says.....

**"There are many ways to be great, but each of us are unique so find the one that brings you the most happiness."**

Scarlett is a professor in the Dept. of Epidemiology and Biostatistics at the Dornsife School of Public Health at Drexel University. She was the 2017 President of the Eastern North American Region of the International Biometrics Society and leads their annual diversity workshops. In July of 2023 she will be Chair of the Dept. of Biostatistics at Boston University



# FLORENCE NIGHTINGALE

Born in 1820, the young lady, Florence, grew up bright and full of desire to learn nursing and mathematics.



However, her calling to become a nurse was strong and clear; therefore, Florence followed her heart and pursued her career.



Her parents wanted her to marry, so they saw her dreams as quite problematic.



Florence, the "Lady of the Lamp", fought to pave the way to make hospitals better.

During times of war and terrible disease she used her talents, collected data, and improved conditions for the public good.

She is remembered as both an "angel" and a pioneer. That is why the world will never forget her.



Florence was a fellow of the Royal Statistical Society. She was a statistician during the Crimean War and she collected data from hospitals to improve sanitation methods. Her incredible contributions to health and statistics have named her the "Pioneer of Modern Nursing."

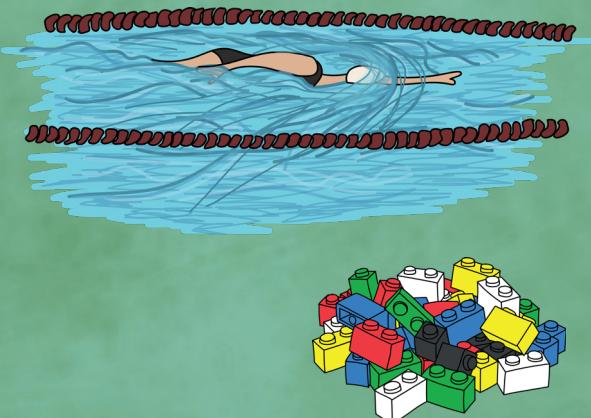


# FRANCESCA DOMINICI

Little Francesca's goal was to be a **positive** person and impact the whole world.



Her papa gave her unlimited encouragement and inspiration to be competitive and ambitious.



Legos, tennis, swimming and math, they were all in her daily agendas.

With her energetic and positive spirit, Francesca has impacted the world by working in **science** as a teacher and mentor.



She cares about health science and climate change, helping to make the future of our world brighter.



Francesca is an Italian statistician, a professor in Biostatistics, and a co-director of the Data Science Initiative at Harvard University. She was also the chair of the Committee for the Advancement of Women Faculty at the Harvard T.H. Chan School of Public Health.



# TALITHIA WILLIAMS



Little Talithia played and climbed trees with her two brothers. She wanted to grow up to be a teacher, inspired by her beautiful and smart mother.



Her community supported her, making her believe that with hard work, there wasn't anything she couldn't do to achieve!



Her path began when she was a graduate student at Howard University. She was amazed by the power and clarity of data to answer important questions with certainty.



Talithia is famous as a professor, speaker, and author. She's also on TV!

She makes learning fun and helps her students become what they want to be.



She writes about women who have a passion for mathematics and love numbers. She speaks to people about understanding data and all of its wonders.

Talithia knows that in life we will face challenges, but like her, if we persevere, we will achieve our goals and realize what our talent is.



Talithia Williams is a statistician, a Professor of Mathematics, and became the first black woman to receive tenure at Harvey Mudd College. She has also held research appointments at the National Security Agency and NASA and has hosted the PBS NOVA documentary series "Zero to Infinity" and "NOVA Wonders."



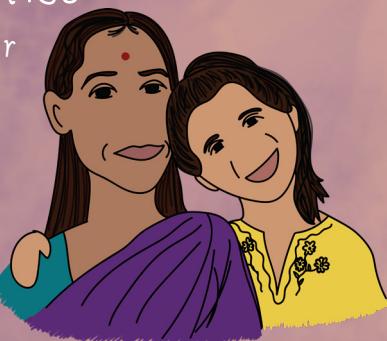
# BHRAMAR MUKHERJEE

Born in Kolkata, India, Bhramar's family immersed her with Bengali literature and art.

She fell in love with Mathematics and thought she might be a writer or an actor at heart.



Surrounded by curiosity, creativity, and with her family beside her,



Bhramar always worked hard on the things she cared about with a touch of art inside her.

Bhramar teaches and mentors statistics students about Big Data and is a woman of ambition, while leading the charge at the University of Michigan!



She tells her students to be brave, try new things, and seek answers.

But, it's OK to fail because you only GROW through stretching and after growth pain, we all stand taller together.



Bhramar is a statistician of Indian origin, a collegiate professor and chair of the Biostatistics Department, Professor of Epidemiology and Global Public Health at the University of Michigan School of Public Health, Associate Director of Quantitative Data Sciences at the University of Michigan Rogel Cancer Center. She is an expert on analysis of administrative healthcare data and data integration.





Little Di loved reading, painting, and sewing dresses for her dolls.

She also loved math and played games with her family in the car,

adding the numbers on license plates wherever they went, no matter how far.

She dreamt of being the first female prime minister of Australia, the land Down Under.

However, she also dreamt of being a math teacher and began to wonder.



Now Di teaches statistics and visualizes data.

Writing open source software fill her time, but she also knows how to take a break with ping pong, cookies, and caffè latte.



Di loves fostering her students' success, and if you want a glimpse into Di's work, collect data from around you, tap into your computer and analyse with finesse!

Di Cook is Professor of Statistics in the Econometrics and Business Statistics Department at Monash University. She was the editor of the Journal of Computational and Graphical Statistics, the R Journal, and is an expert on the visualization of high-dimensional data.

# BIN YU



When Bin was little, her cousin gave her a **book**. It gave her a door to a beautiful new world through which she could look.

She enjoyed playing with **math problems** while new **friends** sheltered her through hard times.



In middle school, little Bin learned high school math from her **teacher** who mentored her to chase her dreams with ladders of **SUCCESS** to climb.



Bin now helps her students to **pursue** their dreams, by leading them to **apply** statistics into their study of neurology, medicine, and genes.

She lives a **colorful** life full of family and **friends**, also taking the time to walk, read, swim, and watch videos again and again.

Being a good and **kind** person, pursuing curiosity, challenging herself, taking a stand, making positive contributions to **society**, these are all the ways in which she sets goals for her life with much **variety**.



Bin is now a **Chancellor's Distinguished Professor** and **Class of 1936 Second Chair** in the Departments of Statistics and Electrical Engineering and Computer Science, and Center for Computational Biology at the University of California, Berkeley. She was **Chair of the Department of Statistics** from 2009 to 2012, elected to the National Academy of Sciences in 2014, and the COPSS E. L. Scott Award  winner in 2019.



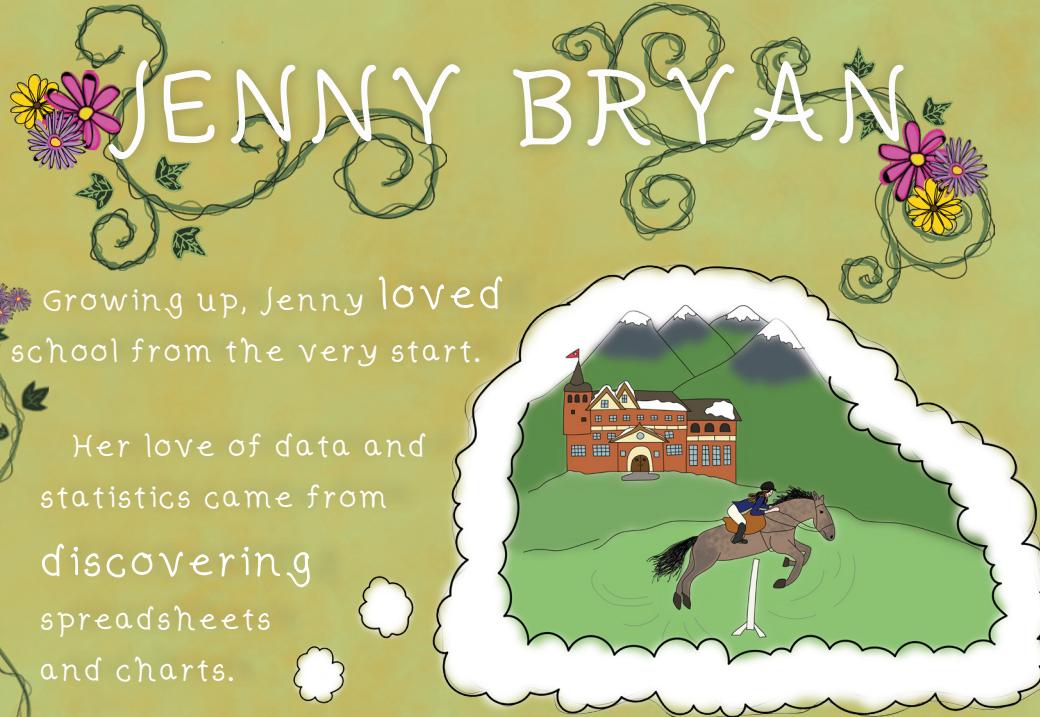
Growing up, Jenny loved school from the very start.

Her love of data and statistics came from discovering spreadsheets and charts.

She embraced being different and always trying something new.

Never worrying about her long-term career, she focused on just the next step or two.

"....I like pretending I'm a horse-riding student at a fancy boarding school in the Alps....."



Jenny is an all star statistician, programmer, and teacher. She explains things so well and makes complicated ideas seem easier.

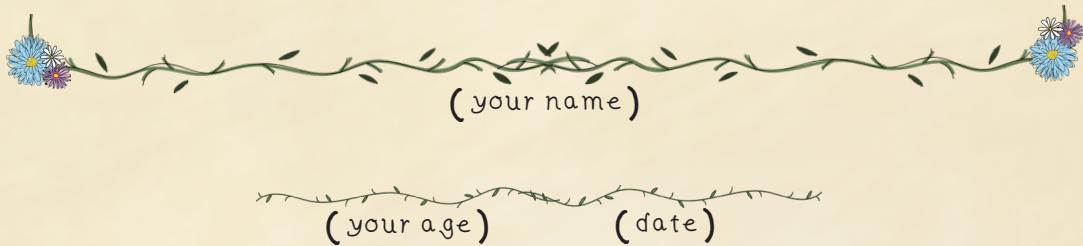


Jenny writes code to help make doing data analysis more straightforward. She's a great mentor, advocate, and data explorer!

Jenny Bryan is a data scientist and software engineer at Posit. She is also an Associate Professor in statistics at the University of British Columbia where she created the Masters in Data Science program.



# CREATE YOUR OWN PAGE!



What's your favorite subject in school?

Draw or insert a portrait of yourself.

What's your favorite thing to do?

What do you want to be when you grow up?

What's your favorite toy?

Who inspires you the most?



# ME IN THE FUTURE

(Fill out this page when you're grown up)



Draw or insert a portrait of yourself.

Where did you go to college?

Where do you work?

How do you see yourself now?

What's the most important  
thing you've learned?

Who inspires you the most?





# "SUPER WOMEN" TEAM



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Science & Technology, China



# FEATURED "SUPER WOMEN"



**Sally Morton**



**Gabriela De Queiroz**



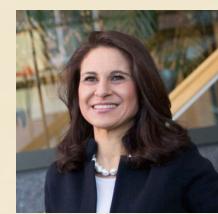
**Gertrude Cox**



**Scarlett Bellamy**



**Florence Nightingale**



**Francesca Dominici**



**Talithia Williams**



**Bhramar Mukherjee**



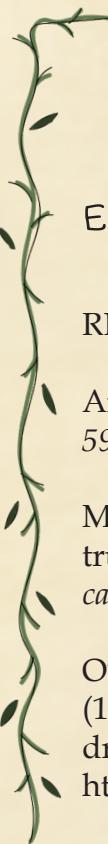
**Di Cook**



**Bin Yu**



**Jenny Bryan**



## ENDNOTES:

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