

## Female Engineers

Beauty and Brains!



### Female Contributors Throughout History

#### AMANDA THEODOSIA JONES

Vacuum method of food canning, a process that completely changed the food processing industry.

#### ELLEN SWALLOW RICHARDS

Pioneered the field of environmental engineering in water contamination. Urged tighter controls over solid waste disposal and air, food, and water purity.

#### MARY ENGLE PENNINGTON

Insulated train car cooled with ice beds, allowing for the first time the long distance transportation of perishable food.

#### MARY ANDERSON

Windshield wipers on automobiles, by 1913 they were standard equipment on all American cars.

#### BEULAH LOUISE HENRY

Bobbinless lockstitch sewing machine  
Vacuum ice cream freezer  
Doll with a radio inside  
Typewriter that made multiple copies without carbon paper.

#### STEPHANIE KWOLEK

Polymade solvent leading to the production of Kevlar (used in canoe hulls, auto bodies, and bullet proof vests).

#### RUTH HANDLER

Barbie doll  
Prosthesis for Mastectomy patients

#### DR. BONNIE J. DUNBAR

Ceramic tiles that enable the space shuttle to survive reentry.

#### ELSA GARMIRE

Advances in optical devices and quantum electronics that made the commercial use of lasers feasible. (used for CD players, printers, and communication)

### Are You a People Person?

Engineering technicians with the ability to communicate and get along with others will excel in today's team-based workplace.

## Patents held by Women

MARY KIES  
Pyrotechnic Night Signals

SARA P. MATHER  
Submarine Telescope

MARGARET KNIGHT  
Rotary engine  
Compound Rotary engine  
Sole Cutting machine

AUGUSTA M. RODGERS  
Car heater  
Improvement in conveyors of smoke  
and cinders for locomotives.

MARIA L. GHIRARDINI  
Rails for street railways

MARY E. WALTON  
Deflecting smoke stack emissions  
through water tanks used on locomotives.  
Sound-dampening system for elevated  
railways.

MARIA E. BEASLEY  
Life-raft

ANNA CONNELLY  
Fire escape

LETTIA GEER  
Medical syringes

IDA R. FORBES  
Electric hot water heater

OLIVE DENNIS  
Ventilator

EVELYN BEREZIN  
Data processing system

PHYLLIS HERSH  
Bi-directional magnetic tape

PATRICIA BATH  
Laser instrument for removing  
cataract lenses.

PATRICIA BILLINGS  
An indestructible and fireproof  
building material called Geobond. (May be  
used to replace asbestos)

BETTE NESMITH GRAHAM  
Liquid paper (originally called  
Mistake Out)

ANN TSUKAMOTO  
Co-patentee of a process to isolate  
the human stem cell.

PATSY SHERMAN  
Scotchgard Fabric Protector

VIRGIE M. AMMONS  
Fireplace Damper

Choose Engineering  
Technology for a High Tech  
High Wage  
Job with a Future

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