

# Creating a Control Chart

**Data Science for Quality Management:  
Process Control and Control Charts**  
with **Wendy Martin**

## **Learning objectives:**

Describe the 7 step process to create a control chart

Prepare data for analysis in R

## 4. Collect Data

- Follow the Plan
- Maintain Process Logs
- Train the Operators
- Develop a data collection station



## 4. Collect Data

- Develop data recording device/system
- Get the data into the computer for analysis



# Variables Data Structure Preparation for Analysis

- If the data are in columns
- A reference column tells which sample the observation is from
- Data column contains the data

Sample	Data
1	1.040
1	1.043
1	1.041
1	1.047
1	1.040
2	1.043
2	1.041
2	1.040
2	1.045

# Variables Data Structure Preparation for Analysis

- If the data are in rows
- Each sample is in one row
- You'll need to transpose the data to columns

# Transform Data in R

```
>transform.dependent.format.to.inde  
pendent.format()
```

	Sample	Data
	1	1.040
	1	1.043
	1	1.041
	1	1.047
	1	1.040
	2	1.043
	2	1.041
	2	1.040
	2	1.045

# Sources

The material used in the PowerPoint presentations associated with this course was drawn from a number of sources. Specifically, much of the content included was adopted or adapted from the following previously-published material:

- Luftig, J. An Introduction to Statistical Process Control & Capability. Luftig & Associates, Inc. Farmington Hills, MI, 1982
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- Ouellette, S. Six Sigma Champion Training, ROI Alliance, LLC & Luftig & Warren, International, Southfield, MI 2005