



# Metrology in Precision Manufacturing

**5<sup>th</sup> Annual HTEC Texas Educators' Conference**

**South Texas College**

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# Manufacturing



- Modern Principles
  - Precision
  - Accuracy
  - Bias

# Quality

- **Acceptance to Specification**
  - **Global Interchangeability**
  - **Multiple Suppliers of an Assembly**
  - **Functional Applications**
  - **Reliability of Product Life**
  - **Cost of Quality**

# Inspecting Angularity with Datums

- **VideoInspecting Angularity using Dial Indicator and Sine Bar**
- **Sine Bar**
- **Gage Blocks**
- **Indicators**
- **Effects of set-up, reference locations and resultants**



# Demonstration

- **Constructing Datum Scheme**
- **Showing how missing a form tolerance create issues.**
- **Explain features verses locations.**
- **Participation trial**

# Precision of Manufacturing

- Importance of part design
- Importance of part dimensioning
- Importance of tolerances
- Understanding of incremental changes in product longevity.

# Closing

- **Products are being produced are higher levels of precision and at a faster pace to meet the changing consumer.**
- **Manufacturing without boundaries of location has launched a new understanding on accuracy.**
- **As demonstrated, something as small as a human hair can have detrimental effects on Quality.**
- **QUESTIONS**