

# A Longitudinal Database of Athletic Shoe Outsole Wear

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## Study Design

### Shoes

- 160 pairs
- Models: Adidas Seeley, Nike Winflo
- 2 sizes each in Men and Women's shoes
- Worn for a minimum of 10,000 steps per week
- Returned every 5 weeks for assessment
- Initial collection + 3 wear assessments

### Methods

1. Pressure Scanner (initial visit, barefoot & with shoes)
2. 2D Digital Scanner
3. 3D Laser Scanner
4. Digital Camera
5. Film and Powder Prints
6. Paper and Powder Prints
7. Simulated Crime Scene Style Prints

**Data Collection Procedures:** Documentation at  
[https://github.com/CSAFE-ISU/Longitudinal\\_Shoe\\_Study](https://github.com/CSAFE-ISU/Longitudinal_Shoe_Study)

## Data Collection Methods



Fig. 1: Paper + Powder Print

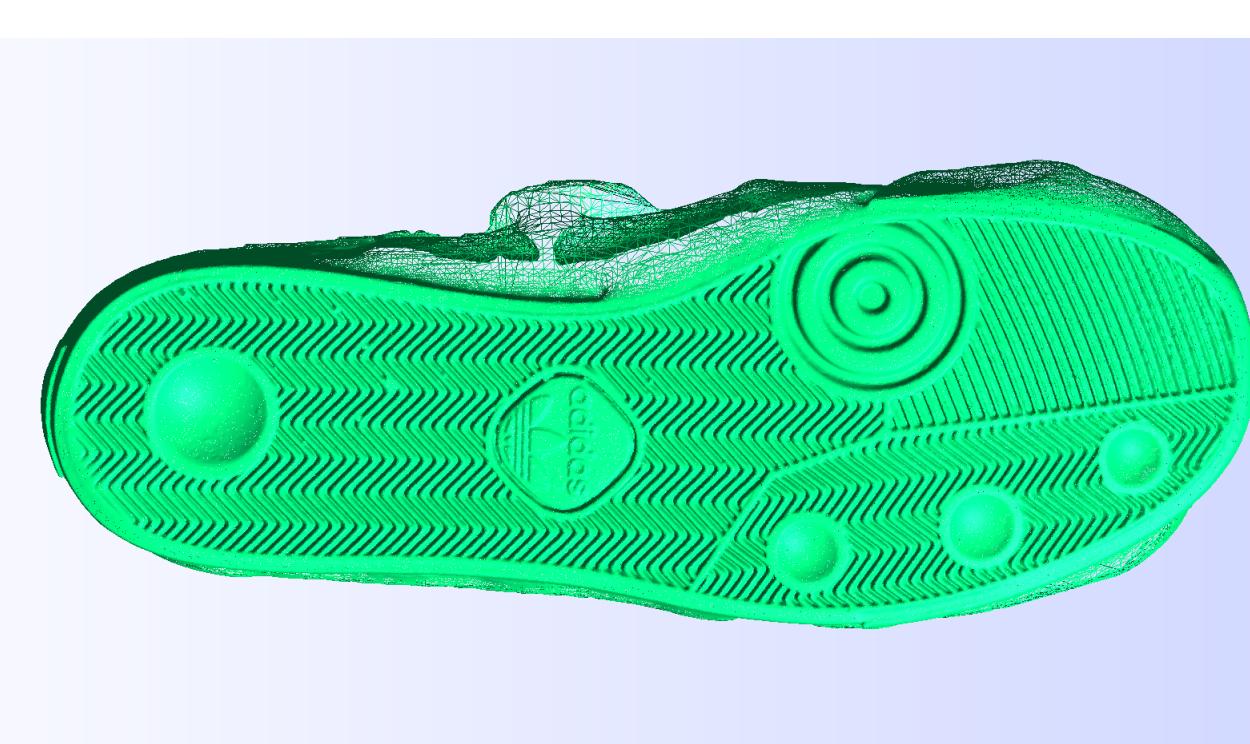


Fig. 2: Rendered 3D Scan

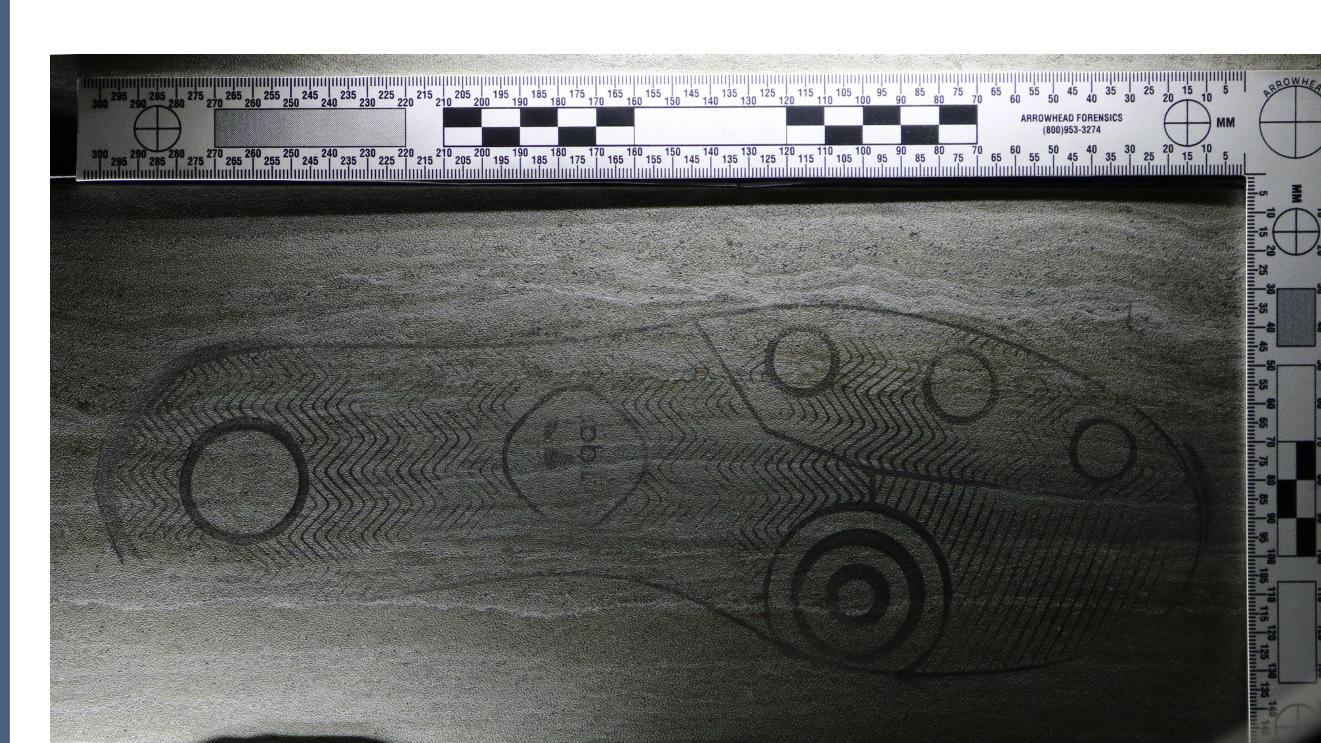


Fig. 3: Crime Scene Print



Fig. 4: Digital Camera

## Access the Database

<https://data.csafe.iastate.edu/DataPortal/>

### Database Features

Metadata about the images, shoes, and participants is included in the downloaded zip file.

Fig. 5: 6 searchable fields, including design, individual shoe ID, foot, capture method, and number of steps.

Fig. 6: Download only the images you need.

Save query	Load query
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Fig. 7: Export queries for later.

### Goals

The goal of this database is to enable comparisons of wear and individual characteristics, as measured by several different collection methods.

- Compare data acquisition methods
- Examine individual wear patterns
- Explore evolution of acquired defects over time
- Compare wear/defect frequency between shoe models

## Build A Query

1. Add new conditions using the + sign
2. Select the join operation to use (AND/OR)  
OR joins linked AND queries
3. Select the filter variable
4. Select the desired value
5. Submit (Initiate Query)
6. Select images for download (right pane)

Fig. 8: Query Builder

### Nike Winflo - Film Prints



### Adidas Seeley - 2D Digital Scan

