Shoeing for Performance
Shoes vs. Barefoot

Most pleasure horses don’t need shoes
Horseshoes are a development of war
Nail on technology is 1000 years old and the Celts were believed to be the first ancient civilization to commonly use horseshoes.
Categories for Shoeing

- Protection
- Traction
- Corrective
- Compensatory
- Therapeutic
Horseshoe materials

- **Steel**
  - Versatile and inexpensive
- **Aluminum**
  - Lighter and softer
- **Plastic**
  - Good concussion absorption and traction
- **Composite**
  - Benefits of metal and plastic combined
- **Boots**
- **Pads**
  - Materials include leather, plastic and metal placed between the shoe and the sole
Steel is the standard
Benefits of Aluminum for Shoes

- **Lighter weight**
  - larger shoes for greater coverage weigh less

- **Softer metal**
  - conforms more to the horse’s way of going
  - absorbs concussion
Plastic
Effects of Pads

- **Detriments**
  - Sole coverage
  - Decrease shoe security
  - Decrease traction
  - Increase length
  - Increase weight

- **Benefits**
  - Sole coverage
  - Absorb concussion
  - Adjust hoof angles
Shoes are modified to improve traction by adding devices to the ground surface of the shoe and/or modifying the barstock.

- Caulks
- Stickers
- Grabs
- Studs
- Fullering or swaging
Traction modifications
Corrective

- Foals with angular limb deformities can have some permanent correction if the physis is open and the limb is still growing at the location of the deviation.
- Mature horses are not included in the corrective category.
Angular deviation vs. Rotational deviation
Compensatory

- Shoes are applied to help counter limb interference caused by poor conformation.
- Four phases of the stride can be altered by application of a shoe:
  - Touchdown, load bearing mid stride, breakover and foot flight are modified with the application of specialized shoes.
Horseshoes can influence the characteristics of a horse’s way of going at 4 stages:

- Touchdown
- Load bearing mid stride
- Breakover
- Foot flight
Asymmetry of the shoe construction is a characteristic of compensatory shoes.
Shoes are applied to treat disease or injury

General goals are:
- Support soft tissues
  - Bar shoes, wedges, trailers, splints etc.
- Provide an environment for healing
  - Pads, treatment plates
- Prevent further injury
Fundamental functions

- Provide support to the limb structures
- Redistribute the weight on the foot
- Provide an environment for healing
- Protect from further injury
- Provide a mechanical advantage over the natural foot
- Provide a site for attachment of therapeutic devices
Bar Shoe

Definition:
- The heels of the shoe are connected in some way other than around the toe.
- The name of the bar shoe is a combination of a description of its form and function.

Functional properties:
- Used for weight redistribution on the hoof capsule and support of the soft tissues of the hoof and limb.
Provide support to the limb structures

- Extensions of the shoe
  - Lateral, medial and caudal and toe extensions
- Splints and braces
  - Fetlock suspension and lateral braces
Medial and lateral extensions

- Support for joints
Caudal extensions

Most common for tendon injuries or Navicular syndrome

- Egg bar shoe
Toe extensions

- Therapeutic stretching and strengthening of tendons and ligaments
Weight redistribution on the hoof

- Configuration of the bar shoe determines how load is transferred
  - Heart bar, mushroom shoe, diagonal bar, 3/4 bar...
Splints and braces:
The shoe provides a convenient attachment site.
Provide an environment for healing and prevention of further injury

- Coverage of injured sites
  - Treatment plates, pads, polymer patches
Support and protection
Biomechanical enhancements

- Reduction of breakover pressure on tendons and ligaments by toe modifications
  - Square toe, rocker toe and rolled toe
- Prevention of dorsiflexion or release of tendon pressure
Providing a mechanical advantage

- Position and configuration of the toe of the shoe to reduce breakover pressure
  - Rocker toe, square toe and rolled toe
- Length of the caudal part of the shoe
  - Extended heels, egg bar, trailer
- Design and materials of the shoe and devices