# Introduction to ASTR 311 Stellar Astrophysics

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- Textbook: *"An Introduction to Stellar Astrophysics"*, 1st Ed., by Francis LeBlanc(2010)
  - we will cover *most* material in Chapters 1 and 3-6
  - plus *some* material in Chapters 2 and 7
- Course website: http://neffj.people.cofc.edu/ASTR311/

## Some Reasons To Study "Stars"

- To determine/understand our place (and time) on Earth and in Space
  - terrestrial geography
  - celestial geography: unravel motions and cycles
  - provide "fixed" references [or do they?]
- To understand our Sun
  - history and evolution
  - composition, structure, energy source
  - magnetic activity
- Formation of planetary systems [and life!]
  - nucleosynthesis
  - interstellar medium

- Galactic structure, dynamics, and chemical evol.
  - spiral structure; rotation curve (dark matter)
- Cosmic distance ladder
  - parallax, spectroscopic parallax, standard candles
  - light from other galaxies is combined starlight
- Physics laboratories on astronomical scales
  - size, density, temperature, mass, velocity
  - electric & magnetic fields and radiation
  - plasma physics, atomic physics, fluid dynamics
  - degenerate matter; general relativity