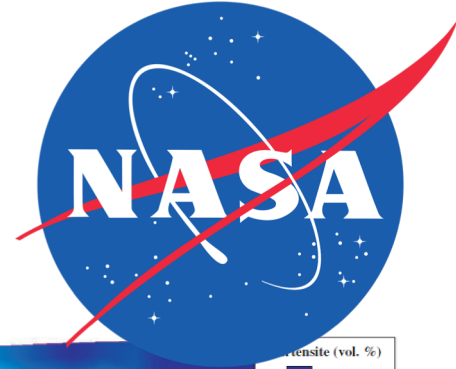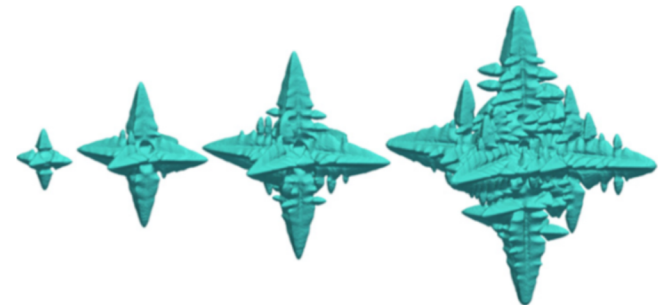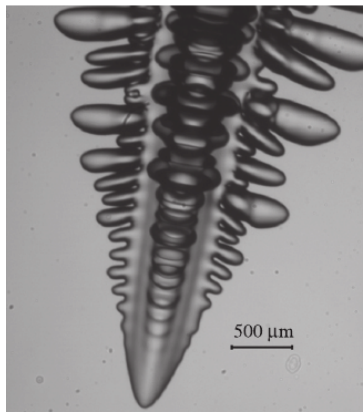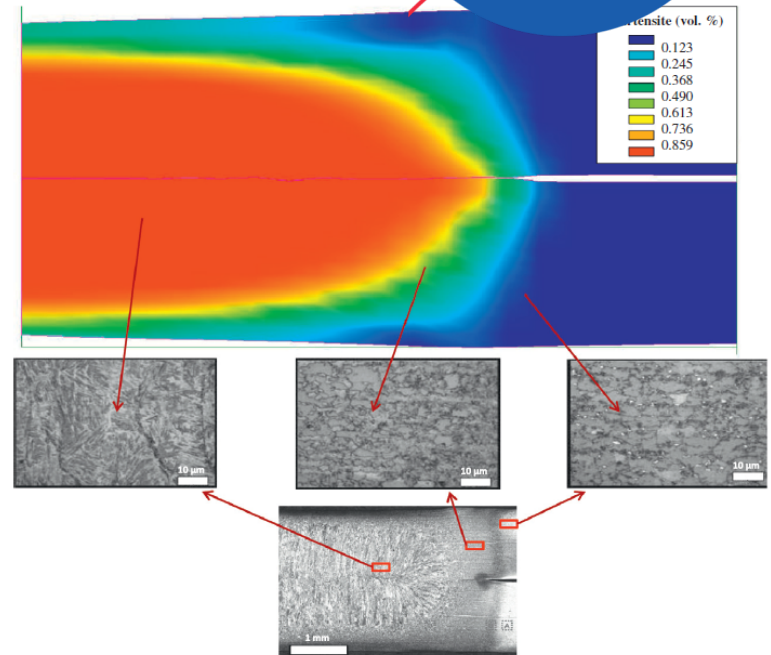# Ryan Lenart
California State University, Los Angeles

- **Modeling Dendritic Solidification Using Lattice Boltzmann and Phase Field Methods**
  - *Prediction of Solidification Microstructure for Powder Bed Fusion Additive Manufacturing*
  - *Modeling Dendritic Solidification in Microgravity and Terrestrial Conditions*

- Phase Field Method, Lattice Boltzmann Method, Discrete Element Method

- Some parallel code, most is still serial.

Ryan Lenart

California State University, Los Angeles

- My code works. Now I need to make it faster.
- Modeling a significant domain takes too much time.

- I want to
  - Optimize my code as much as possible
  - Take full advantage of our computing resources
    - New graphics cards
    - Many cores