



# CASTING ANALYSIS & RESOLUTION



**Dr. Preston Scarber and Vista Engineering & Consulting, LLC  
will simulate and analyze your cast to:**

## **INCREASE**

- **Efficiency**
- **Revenue**
- **Productivity**
- **Part Strength**

## **REDUCE**

- **Prototype Expense**
- **Pour Time**
- **Incomplete Mold Fills**
- **Scrap Rate**

**Don't wait weeks or months.  
Realize these improvements **within a week!****

## **Hire Vista Engineering for a single cast analysis:**

- Send the specs (defect, material, etc..) through this simple form:  
<http://vistaeng.com/casting-contact-form>
- Sign and return the quote we provide.
- Transmit the entire casting geometry: part geometry, gating, risering, filters, & cores.
- We will use Flow 3D software to simulate your cast.
- We will analyze the cast to determine possible causes of the anomaly you're experiencing.
- Dr. Scarber will prepare a report and present it to stakeholders. He will discuss the simulation, possible causes for defects or anomalies, and ideas for ways to eliminate the problem.
- Cost for a single job is \$7500. This can be complete in under a week!  
(depending on the size and scope of the cast & previously scheduled jobs)
- **CastExpo show special of \$5000 for this service is good through June '22.**

**Are the suggestions and ideas for solutions from the anomaly analysis not enough to get you to the stronger, higher quality part you're seeking?**

**Hire Vista Engineering for a single cast *resolution*:**

- We will determine the best available design and specifications to resolve your casting anomaly.
- We will use Flow 3D software to simulate your re-designed cast and demonstrate how the recommended changes will improve your part.
- Dr. Scarber will prepare a report and present it to stakeholders. He will discuss the recommendations and simulation.
- Cost for a single job is \$4500.
- [CastExpo show special of \\$3000 for this service is good through June '22.](#)

## Ways to use our services beyond a single cast analysis:

- **Prototyping** – If you're designing a new cast, test it out without wasting materials.
- **Customer requirement-** Satisfy customer requirements to simulate casts.
- **Outsource all simulation needs** – Enter a longer term & reduced-price arrangement to get more simulations every month.
- **Complete metallurgical characterization** – Utilize our professional engineers, ISO 17025 certified laboratory, and scanning electron microscope to discover the nature of your anomaly if you aren't sure.



## Preston Scarber PHD PE

### Award winning & nationally recognized casting expert

#### **Honors and Awards:**

- AFS Outstanding service award
- AFS Best Paper Engineering
- UAB Outstanding Young Engineer
- UAB Alumni of the Year

Over 35 companies have trusted their casting problems to Scarber and realized estimated savings of more than \$13 mil.

#### **Education:**

- Ph.D. Materials Engineering, the University of Alabama at Birmingham, 1998  
Dissertation Title: "*Finite Element Modeling of Particle Cracking in Metal Matrix Composites*"
- M.S. Materials Engineering, the University of Alabama at Birmingham, 1995
- B.S. Materials Engineering, the University of Alabama at Birmingham, 1992

#### **Summary of Professional Accomplishments:**

- Developed a method for accurately simulating shrinkage porosity in Al-Si casting alloys.
- Developed a thermo-physical properties database for more accurate simulation of Al Si alloys.
- Developed a method for simulating the rate and volume of gas produced when liquid metal contacts bonded sand.
- Improved the accuracy of lost foam casting simulation through collaboration with commercial code-writers.
- Co-developed basic gating rules for lost foam castings.
- Developed a method to simulate foam pattern irregularities for more accurate prediction of anomalies in lost foam castings.
- Developed a method to quantify the filling behavior of gating systems for open cavity castings.

## FAQ's

Q: Do you work with my material?

A: We work with all kinds of metals and alloys, but no plastic or plastic composites.

Q: Do you work with gravity casting?

A: Yes, we can simulate both gravity and pressure casting.

Q: Do you work with my kind of mold?

A: Yes, we work with sand molds, foam patterns, permanent molds, and more.

Q: Do I need to have my own license for simulation software?

A: No, we have the licensing for Flow 3D, the software we use to create the simulations.

Q: Do you need to come to my foundry to complete this work?

A: No, we can provide this service entirely remotely. In person visits are not available for single jobs but may be arranged if a more in-depth relationship develops and would benefit from a site visit.

## Get started now.

- Complete the form and we'll contact you.
  - <http://vistaeng.com/casting-contact-form>

OR

- Call our office and schedule a meeting with Dr. Scarber. 205-307-6550 x 105

**Act quickly to take advantage of CastExpo show specials (\$5000 analysis & \$3000 resolution) and to get priority scheduling of your job.**