



Idaho Society of Professional Engineers Northern  
Chapter invites you to attend a luncheon presentation:

12:00pm, Thursday, February 20<sup>th</sup>  
at the Coeur d'Alene Inn

**Another Engineering Marvel:**  
***3D Printing:***  
***Past, Present and Future***  
**Presented by: Tom Daugherty**

**1.0 PDH Credit**

**Lunch & Presentation Fee:**

**\$25 Non-Members, \$20 Members**

**(cash and check only)**

Funds raised from the event will help support the ISPE  
Northern Chapter and MathCounts

**RSVP to [ispenorthernchapter@gmail.com](mailto:ispenorthernchapter@gmail.com)  
to reserve your seat!**

Following the luncheon presentation there will be an  
opportunity to visit booths and exhibits demonstrating  
the 3D printers and their capabilities, as well as other  
booths promoting engineering, engineering  
achievements and engineering education.



# 3D Printing: Past, Present and Future

## Presented by: Tom Daugherty

### Presentation Abstract:

*"We live in a world full of needs"*

*"Engineering is a field that identifies those needs, prioritizes them, and develops innovative ways to not only fill those needs; but to do so using stewardship, innovation, and limited resources; in a sustainable way, and developing the necessary technology that makes the impossible possible." (~ G. Brands-Past-President/President-Elect- Idaho Society of Professional Engineers)*

"Additive Manufacturing," also known as "3D Printing," is a text book example of an innovative idea being implemented, using engineering, to fill a niche in the growing needs of our society.

The first working 3d printer was invented in 1984 by Charles (Chuck) Hull for 3d Systems. Since its inception, the technique has expanded into manufacturing, and has gained steadily in popularity. Expiration of patents, decrease in cost, and advances in materials science have spurred significant recent adoption. In the last three years alone the technology has transcended to consumer applications with many national chain stores announcing a 3D printer offering. Many middle schools are adopting 3D printing curricula which advocates applaud as a way to promote a STEM education agenda. There are now some post-secondary schools that have added degree programs for 3D Printing.

Materials science promises to be an exciting area of growth. Graphene, carbon fiber and advanced nylon compositions are some of the more advanced materials. However, innovative engineering studies are underway to utilize cement, salt, wood fibers, and other materials that can be redirected from the waste stream as 3D Printing feedstock. This paper will examine a brief history, current status, and future prospects of 3D Printing. Industry is looking hard at this technology to quickly and more affordably produce parts that are not mass-produced.

**Tom's Biography:** Mr. Daugherty is a senior executive with over 30 years of managerial and ownership experience. Most recently he spent seven years leading an environmental products company with a staff of multi-discipline engineers selling to municipal and industrial markets. Mr. Daugherty has a proven track record leading companies to diverse income sources, culminating strategic alliances, and delivering financial targets. He has helped raise over \$15 million in debt and equity for various startup and mature companies. Mr. Daugherty holds a Bachelors Degree in Management and an MBA in Sustainability from Marylhurst University. He enjoys living in the Pacific Northwest with his wife and family.