

**Jeffrey D. Jennings, PE**  
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## **Profile**

- Senior Process Development and Design Engineer with 23 years of industrial and R&D experience
- Wide exposure to many different industrial environments: (fluid systems, photographic films, advanced material composites, nuclear, chemical, textile fibers, polymer products)
- Works comfortably in both R&D and manufacturing environments
- Recognized as a leader in developing highly innovative fluid control designs
- Inventor & developer of innovate new form of fluid pressure regulator
- Excels at finding simple, elegant solutions to complex process problems (minimizing capital \$)
- Risk taker and self-motivated team player
- Outstanding communications skills (including multiple media formats, 3D design modeling)
- Extensive computer automation, website development, and programming skills
- Small business owner / entrepreneur with industrial consulting experience

## **Work Experience**

### ***President & Principal Engineer: Fluid Design and Control business***

Equilibar, LLC 2007 to present  
Fletcher, North Carolina  
Co-owner, inventor, principal engineer  
Design, manufacturing, and sales of innovative precision pressure regulators

Insight Process Solutions, LLC 2002 - present  
Hendersonville, North Carolina

- Development of innovative fluid pressure and flow controls
- Invention and development of patented Equilibar® Precision Back Pressure Regulator
- Development of proprietary medical applications utilizing precision pressure regulation
- Specialization in delivery systems for precision coating systems

### ***Process Development Consultant: R&D for new Digital Printing Industry components***

Day International: 2002 - present  
Arden, North Carolina

- Invented and developed novel products and processes for next-generation digital image transfer consumables with \$30MM/year opportunity.
- Responsible for new product design, new process design, as well as equipment design and start-up.

### ***Senior Process Development Engineer: Medical X-Ray Film R&D and manufacturing facility***

Agfa Corporation: 1999 – 2002  
Sterling Diagnostic Imaging – 1996 – 1999  
DuPont Corporation: 1991 - 1996  
Brevard, North Carolina

- Conceptualized, designed, supervised, and started-up a \$2MM of innovative projects to simplify and improve mechanical reliability of the photographic emulsion preparation and delivery systems which resulted in dramatically reduced capital and maintenance expenses, which improving quality and uptime.
  - Invention and design of new fluid control devices and the development of unconventional process control strategies.
  - Major benefits include dramatic reduction in the number of process valves and the total conversion to seal-less pumps
  - Integration of 32 parallel steady state flow streams to precision photographic coating heads

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- Reduced emulsion filtration costs by 70% (~\$100,000/year) while increasing product quality through a process of experimentation, substitution, and price negotiation with vendors.
- Dramatically simplified the process design of the Emulsion Make and Emulsion Delivery areas resulting in the removal of approximately 160 automatic control valves. Increased process capability and reliability, decreased maintenance expenses while reducing the installed investment by ~\$400,000.
- Wrote and executed Design Control programs compliant with FDA and ISO 9002's quality documentation system.
- Worked closely with R&D Chemists, Project Engineering, Manufacturing management, Operators, and Maintenance to implement dozens of new processes into the plant. These include dry gelatin conveying, automated solution make-up from powder, improved kettle agitation, membrane degassing systems, etc.

### ***Field Engineering Rotation Program***

DuPont Corporation, 1985 - 1993

Three locations over six years

Trained in DuPont's innovative Field Engineering Program, with four distinct assignments designed for accelerated learning.

### **Product Development - Advanced Material Composites**

Wilmington, Delaware: 1989 - 1991

### **Maintenance and Small Project Engineering: Savannah River Plant**

Aiken, South Carolina: 1987-1989

### **Process Development - Titanium Dioxide manufacturing facility**

New Johnsonville, Tennessee: 1985 - 1987

## Education

### **Clemson University, Clemson South Carolina**

- Bachelor of Science, Mechanical Engineering, May 1985
- Magna Cum Laude

### **Cooperative Education Program:**

Milliken and Company: Gayley Mills, Marietta, South Carolina

1981 - 1985

- Five assignments (18 months) in Plant Engineering at textile Dyeing & Finishing plant.
- Project engineer for equipment installation, energy studies.

### **Licensed as Professional Engineer, North Carolina, 1998**

N.C. License # 023995

### **Patents**

- 2 US Patents regarding Sensitive Back Pressure Regulation
- 1 Pending US Patent regarding Vacuum Pressure Regulation
- 1 Pending US Patent regarding Medical Application of Sensitive Pressure Regulation
- 1 Pending US Patent regarding Precision Elastomeric Metering Valve