



2018 Geo-Virginia Conference Williamsburg, VA April 10-11

“Changes in 45 Years of Geotechnical Practice – Lessons Learned”

Jerry A. DiMaggio, PE, D.GE
Applied Research Associates, Inc.
jdimaggio@ara.com



NATIONAL SECURITY



ENERGY & ENVIRONMENT



INFRASTRUCTURE



HEALTH SOLUTIONS

THE REAL: Jerry A. DiMaggio

- Pin Ball Machine Repairman – 1yr
- Country Club Maintenance Foreman – 3yrs
- Teamster Trucker– 2yrs
- Father – 40yrs
- Grandfather – 7 boys and girls
- Husband – 49yrs
- Civil Engineer (geotechnical and construction specialist) - 46yrs)

Presentation Outline

- Where have I been?
- What did I learn personally and professionally?
- What did I learn technically?
- What's NEXT?
- Life of an Engineer following Graduation

Where Have I been?

- 46 years in practice (that's a very LONG TIME)
 - State and Federal GOV
 - Non for Profit – National Academies
 - Sole Proprietor and Principal at a National Consultant
 - Academic community – Adjunct at three universities
- Travelled to all 50 States, Central and South America and Europe; all for work. Also worked on projects in Australia and the Middle East.
 - Met many wonderful people of different religions, cultures, nations; with different skill sets and experience

What did I Learn Personally and Professionally

- Engineering is a profession and NOT a job (for me)
- **Importance and THE POWER of effective communication both verbal and written**
- Always be direct, persistent, and respectful (apply what your parents taught you)
- **Never turn down a networking or speaking event (the least you will do is meet some new friends)**
- Never stop learning from others and yourself!!!!
- **Engineering is a business as well as a profession**
- Reinvent one of your primary technical skill sets @ every 5 years
- **Always try to be a mentor or protégée when dealing with others in every situation**

What did I Learn Personally and Professionally

- Develop your Team Building Skills Early: working in your “cylinder of excellence” won’t get you very far
- **Should have taken more psychology and sociology courses: Ability to work with different and sometime “multiple” personalities is a Key lesson**
- Be proud of your accomplishments but DON’T let your head get “too big”
- **Lead a balanced life (hobbies, family, work, and service) this will make you a HAPPY PERSON and result in a WONDERFUL LIFE!**
- Your personal and professional paths should be flexible (things are always changing); don’t be too scripted in your plans. There are no BAD Experiences.

What did I Learn Technically?

- KNOWLEDGE (in depth) of Geology, Soil and Rock Mechanics is Imperative
- **Mainstreaming Innovations in engineering is a slow, sometimes very slow process.**
- A Successful Geo-professional must know: structural analysis, hydraulics, behavior of materials, construction, inspection, contracting and specs.
- **Some technical topics are more fun than others: my favorites are deep foundations and earth retaining structures**
- Importance of knowing loads, load combinations and performance requirements

What did I Learn Technically?

- A dislike of dispute resolution assignments
- **Respect for and skepticism of software application results, Importance of details**
- Strong understanding of the connection between design and construction project phases (they are really a continuum for geotechnical features)
- **The power of proactive project management**
- A complete understanding of “what is the true definition of DESIGN”
- **The GIANT GAP between SOA and SOP in Geotechnical design and construction**

What did I Learn Technically?

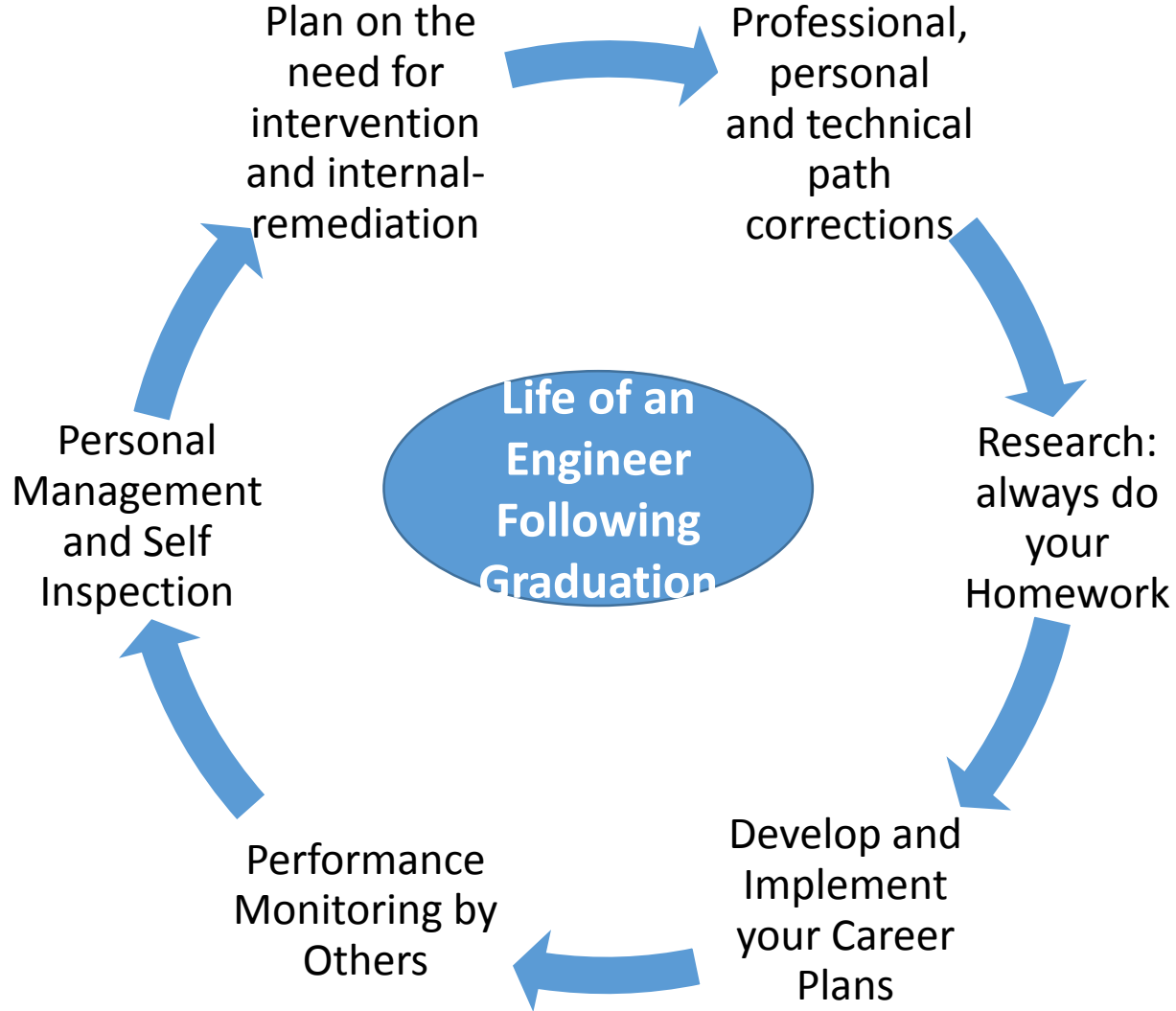
- Subsurface Investigations (summarize, interpret and analysis)
- **Design Platforms: ASD, LFD and LRFD**
- How to select the “correct” soil and rock parameters
- **How to Select appropriate design models and interpret results**
- Earth Retaining Structures are a very important Infrastructure Asset
- Power and range of Geosynthetic products and applications
- Meaning of: performance requirements, service life and design life
- Sophistication and power of Instrumentation/Monitoring

What did I Learn Technically?

- Reliability based Design
- **Design optimization in particular for deep foundations**
- Active Risk Management applied to the selection, design, construction and long-term performance of Geo-features
- **How to avoid technical and contract disputes**
- How to balance simplicity and complexity of design and analysis
- **Power and diverse capabilities of Ground Improvement materials and techniques**

WHAT'S NEXT FOR ME?

- Honestly I am not quite sure
 - More fun
 - Less stress and fewer stressful projects
 - More family time
 - More FUN travel
 - Less Work
 - More Hobbies



Jerry D. "Alias Joe D' Cousin"
jdimaggio@ara.com

