



# Research relationship between industry and academia

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# Our discussion today

- Industry involvement in publishing technical peer reviewed journal articles,
- Industry involvement in technical and professional societies,
- Academic successes past, and future,
- Finally, how we might improve the relationship between industry and the universities

# Differences & Similarities

- Differences between industry and academia:
- Industry is seeking a profit - \$ - which results from:
  - Efficient manufacturing operations
  - Well planned marketing strategy
  - Well executed sales strategy
  - Good customer relations
  - Maintain good public relations
  - Desire continuous improvement
- They achieve this in an environment of secrecy and confidentiality

# Differences & Similarities

When seeking a solution industry wants:

- A well developed solution,
- Easy implementation,
- No large expenditures of capital,
- No significant disruptions to operations,
- No or little risk of failure – it needs to work the first time

# Differences & Similarities

The university is also seeking a profit – prestige – and they need to:

- Operate and maintain efficient operations,
- Develop and execute a marketing strategy,
- Maintain good relationships with all of their customers,
- Continuously improve.

They thrive in an environment of openness – of sharing:

- Research results,
- Data, information, and knowledge.

# Differences & Similarities

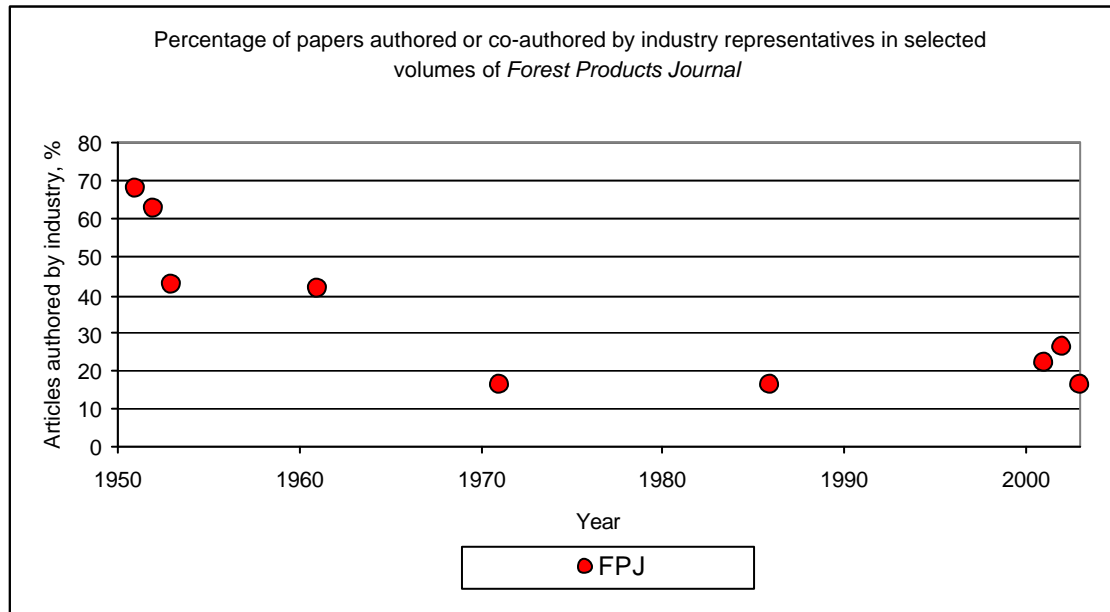
When seeking a solution academia wants and encourages:

- A well developed and thorough experimental plan,
- Control of variables and elimination of “noise”,
- Excellent analytical and testing techniques,
- Thorough investigation of variables,
- Abandonment or redefinition of project given new insight

# Knowledge transfer - journals

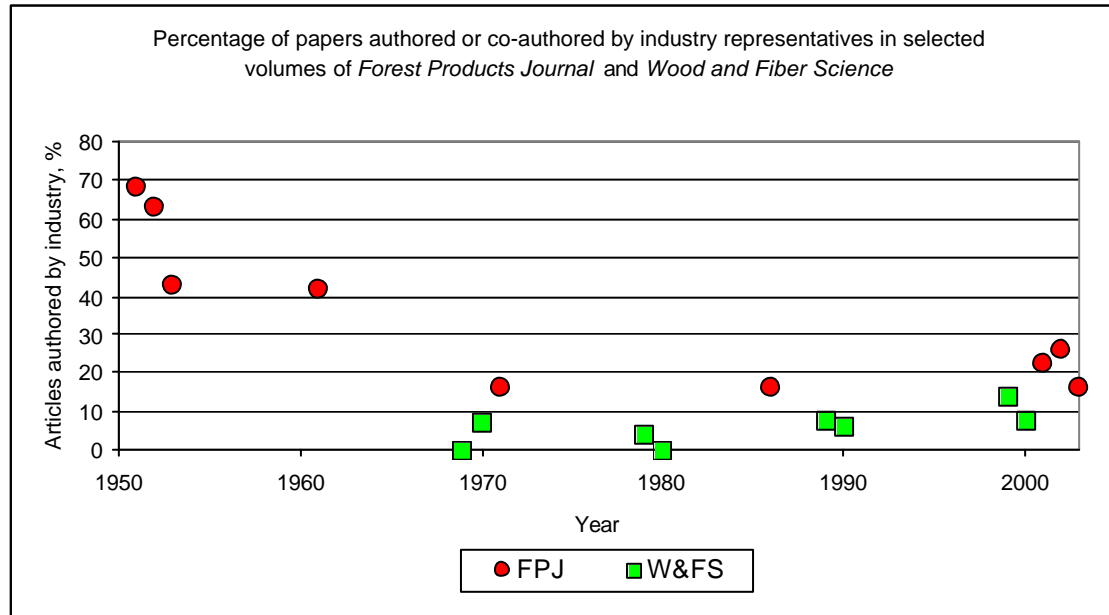
Is there lack of interest by industry towards the basic, scientific research knowledge published in peer reviewed journals?

# *Forest Products Journal*





# *Forest Products Journal and Wood and Fiber Science*



# Support in 1961

Robert W. Hess, Director of Research, Georgia-Pacific Corporation

wrote an opening article regarding the need for research and his

article was followed by 15 others written by research directors.

# Support in 1961

The other companies participating were:

- Chain Belt Co.
- Cascades Plywood Corp.
- Potlatch Forest, Inc.
- The Dean Co.
- British Columbia Forest Products, Ltd.
- Appleton Machine Co.
- Chapman Chemical Co.

# Support in 1961

The other companies participating were:

- Forest Fiber Products Co.
- American Marietta Co.
- Southern Pine Lumber Co.
- Greenlee Brothers & Co.
- Weyerhaeuser Co.
- Sumner Iron Works
- The Borden Chemical Co.
- The Dow Chemical Co.

# Academic Successes

- The pin-type moisture meter
- Stress rating lumber
- Plastic lumber
- Use of ultrasonics to determine properties of wood
- Inclusion of zinc borate in pMDI bonded aspen composites

# Academic Successes

- The modern I-joist concept
- The use of agricultural residues in composites
- Use of lignin in adhesive systems in wet & dry formed hardboard
- Development of modern analytical testing equipment and techniques
- Cement-bonded wood-based composites

# Academic Successes

- Saw blade design improvements
- Circular saw and band saw dynamic stability

# Mutual Industry & Academic Successes

- Waferboard, flakeboard, oriented strandboard and related products
- Guide systems for circular saws
- Stress rating of pallets
- Isocyanate resin



# Future Academic Successes

- Genetic transformations to reduce the amount of lignin in wood
- Advanced structural composites

# Knowledge transfer - journals

But, when I asked several people, “Is there lack of interest by industry towards the basic, scientific research knowledge published in peer reviewed journals?” the answer was a resounding ---

**NO!!**

We are very interested --- and we use the information.

# Value of Academic Research Community

- The academic community has the skills and ability to do basic research,
- Academic research shows the potential improvement or new product ideas,
- Experiments are well controlled, documented and duplicated,

# Value of Academic Research Community

- Universities and government facilities provide specialized laboratories and testing equipment,
- Results are recorded in peer reviewed journal articles as well as other forms including students, training classes, presentations, conference proceedings,
- Provide institutional memory

# How do we improve the relationship

- Improve communication between the academic community and senior level management in industry
- Develop and promote multi-disciplinary teams formed between departments at a university
- Include whenever possible people from industry
- Develop and promote inter-university cooperation

# How do we improve the relationship

- Establish industry advisory boards – use with caution!!
- Exchange personnel regularly – university to industry and industry to the university
- Recognize the best article written by or co-authored by a person from industry
- Place interns and graduates in industry and then track them

# How do we improve the relationship

- Develop a fifth-year certificate to show advanced specialized learning
- Innovations based on product needs or required performance and less emphasis on resource driven innovation

**Thank you ...**

**I look forward to working with you to improve the research**

**relationship between us**