Popularizing your Research

UGPTI Transportation Seminar Series

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"In science the credit goes to the man who convinces the world, not to the man to whom the idea first occurs."

-- William Osler

Canadian physician

Considered by many

to be the father of modern medicine.

"When mechanistic methodology is used for pavement design, static analysis is generally applied. Further, pavement surface deflection tests using Falling Weight Deflectometer (FWD), which is widely used and considered capable of simulating moving wheel load, are used to evaluate structural integrity of pavements. Analysis of the resulting deflection results is always performed using static backcalculation methods. It is, therefore, important to quantify how much pavement responses differ from the responses due to the action of static and a moving load travelling at a constant speed. In this paper, closed form governing equations are derived assuming that a non-circular (i.e. rectangular) load moves at a constant speed on a surface of a pavement system composed of Voigt-model type layers. Theoretical solutions are derived by applying Fourier transform in a space domain and FFT in a time domain. From the theoretical results obtained, it has become clear that pavement responses decrease in magnitude with increasing speed of moving load. Further, for the same speed of the moving load, there was also a decrease in the magnitude of pavement responses with increasing damping ratio of materials. However, the effect of material densities was insignificant to the pavement responses. . . ."

"The need to obtain adequate ELMyHmode energy confinement simultaneous with operation near the neoclassical tearing mode betalimit and at/above the Greenwald density limit suggests that careful optimization of plasma performance will be required to obtain the desired fusion power performance, and that 'active means' to control or inhibit the onset of neoclassical tearing mode activity – a common precursor of plasma energy collapse or disruption in present experiments operating near the beta and/or density limits – will be required."

Why do
YOU
want to be popular?

What do you do?

Why the need to popularize?

- Language of science is growing more complex

Why the need to popularize?

- Science is increasingly specialized

"A scientist is someone who knows more and more about less and less until they know practically everything about almost nothing."

Why the need to popularize?

- Growing emphasis on accountability
  - ✓Grant programs
  - ✓Legislative programs
  - ✓Public accountability
    - ✓New media impacts

Potential audiences

Your neighbors

- ✓ Mr. and Mrs. Taxpayer
- ✓ Ms. Voter
- ✓ Mr. Community Activist

Local governing bodies

- ✓ city council members
- ✓ zoning board members
- ✓ county commissioners

More potential audiences

State Officials

- ✓ Governor and other officials
- ✓ Legislators
- ✓ Committee and commission members

Federal Officials

- ✓ Senators and Representatives
- ✓ Agency officials
- ✓ Regulatory officials

Important audiences

Other constituent groups

- ✓ special interest groups
- ✓ foundations
- ✓ private businesses
- ✓ funding organizations

More important audiences

- ✓Your boss
- ✓Academic deans
- ✓University President and Administration
- ✓State University System staff
- ✓State Board of Higher Education

What do they have in common

- ✓ Exercise some control over your programs
- ✓ Generally want only information vital to decisions
- ✓ Have lots of competition for their attention
- ✓ Are asking for quantifiable differences brought about by investment

Your task: Answer two questions

So what?

Who cares?

What should you say?

In lay terms, explain the social, environmental and/or economic impacts of your research, outreach or teaching efforts.

State your accomplishments and the payoff to society.

What to include

Quantifiable positive change in at least one of the following:

- ✓ Economic value or efficiency
- ✓ Environmental quality
- ✓ Health and safety
- ✓ Social well-being

You **CAN** talk about the potential of your research.

- ✓ Quantify if you can
  - Numbers count
- ✓ Qualify if you must

Popularized reports are NOT:

- ✓ about process
- ✓ about attendance figures
- ✓ a full and complete story

Where to start?

Beginning

and the

End

Abstract

- ✓ A concise summary of your paper/topic.
- ✓ Already forced you to prioritize and identify key information.

Cautions

- ✓ Abstracts are jammed with jargon
- ✓ Abstracts are sometimes packed with process
- ✓ Sometimes too narrow

Introduction:

A great place to find problem statements and background information.

Results and conclusion:

Usually the really interesting stuff – take this from the back of your paper and put it at the front of your popular article.

Tips and Techniques

Work with your publisher

- ✓ Ask questions
- ✓ Ask for examples
- ✓ Ask if they have a style guide

Tips and Techniques

Watch out for jargon and acronyms.

Overuse can lead to:

- ✓ Misunderstandings
- ✓ Lack of understanding
- ✓ Reader exasperation

WTF

LOL

WTF

Wisconsin Truckers Federation

LOL

League of On-line Librarians

Tips and Techniques

Use an example

Gives your reader someone to identify with.

Helps personalize your work.

Similar to a case study

Tips and Techniques

Enlist help

- ✓ Find a test reader
- ✓ Find a proof reader
- ✓ Find a writer

Tips and Techniques

- ✓ Use pictures, illustrations and graphics (and captions!)
- ✓ Use subheads

“Journalism is literature in a hurry.”

Matthew Arnold
English poet and cultural critic

“The most exciting phrase to hear in science, the one that heralds new discoveries, is not ‘Eureka!’ but “That’s funny. . .”

Isaac Asimov

Author and biochemist

Words
Are
Powerful

"It's as interesting and as difficult to say a thing well as to paint it. There is the art of lines and colours, but the art of words exists too, and will never be less important."

Vincent van Gogh

The difference between the right word and the almost right word is the difference between lightning and the lightning bug.”

Mark Twain

Even punctuation makes a difference.

Let’s eat Grandma!

Let’s eat, Grandma!

"Like stones, words are laborious and unforgiving, and the fitting of them together, like the fitting of stones, demands great patience and strength of purpose and particular skill."

-- Edmund Morrison

Watercolor painter