

# Reflections of an Experienced Researcher on Presenting and Publishing Quantitative Research

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I would like to thank Niklas Arvidsson and Pehr-Ola Pahlén for the opportunity to present to you today at this PhD Workshop.



It is an honor and a real pleasure to be taking part in this workshop.

# Overview of Presentation

This presentation is organized as follows:

- ▶ Some Background
- ▶ Where Do Research Ideas Come From?
- ▶ What is Your Philosophy of Research?
- ▶ What About Collaboration?
- ▶ What About Writing a Publishable Paper?
- ▶ Why the Hard Work is Worth It
- ▶ Some Final Points

# Some Background



I have authored or co-authored over 160 refereed journal articles, 35 book chapters, and 10 books.



Presently, I serve on over a dozen journal editorial boards and review papers for many other journals as well.

I hope to share with you today both professional and personal experiences in this workshop as well as those garnered from other experts. Sources and additional readings are provided at the end of this presentation.

Whether it is your first journal article or your 100th, one never gets tired of publishing and seeing one's research and hard work in print!

Also, for every professor, a great joy is seeing your students publish and succeed.

As a member of many journal editorial boards, and also as a Guest Editor of several special issues of journals, it is very rewarding to see good papers shepherded through the publication process.

We are all here because we care about research – in doing it, publishing it, and disseminating it.

As researchers and scholars, we care about adding to the discipline's body of knowledge and, perhaps, beyond.

You are very lucky, since you are all in fields – Operations Management, Transport and Logistics, Business Administration, Operations Research / Management Science, and/or Economics, in which there are many open and important problems to research!

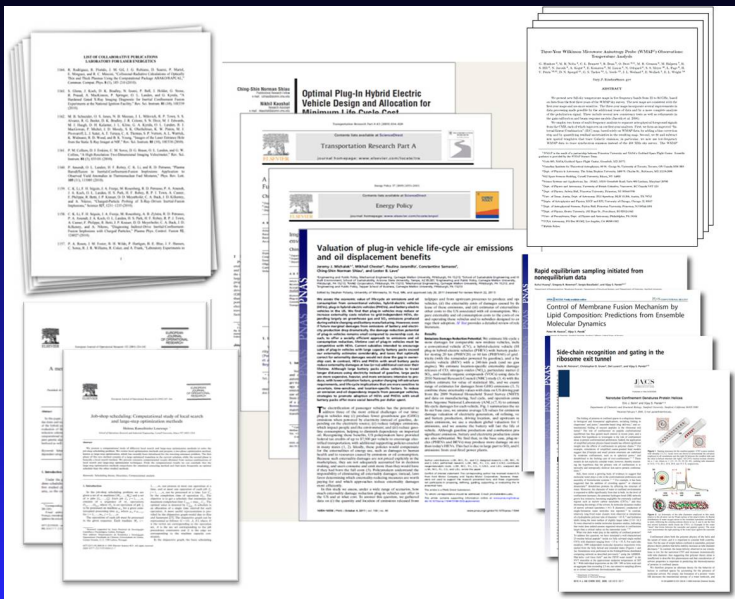
# As Researchers We Take Part in Conferences



# We Decide Which Journals to Publish In



# We Admire Our Papers When They Appear in Print



# We Celebrate Our Publications!





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- ▶ **Intellectual curiosity:** observing the real world, delving deeply into issues, having passion
- ▶ **Networking:** discussing problems with colleagues, going to conferences, talking to others even outside your professional circles
- ▶ **Reading the literature:** how can you improve on what has been done? Do you have new tools or new ideas for old problems or old tools for new problems?

# What is Your Philosophy of Research?

Note that, ultimately, the impact of your research is the principal measure of success.

- Work on problems that you enjoy and follow your interests. It is essential to have passion for the research that you are doing. Passion is what drives research quality, creativity, innovation, and impact.
- You may begin with small ideas and then extend them as far as is possible to increase the scope and applicability.
- If possible, focus on the big problem, which, when you publish the results, will get cited for years to come. You will take pride in your work many years from now as you look back at it.
- Doing derivative work may be OK to create a portfolio of research.



Try to go after the “big winners” in terms of research problems so that you will have a big impact. It will not help your career much to publish just incremental papers.

You want your work to have a high impact on society and the profession.

You may not be able to, according to Professor Wallace Hopp of the University of Michigan, change the world with a single paper, but you might with your cumulative portfolio.

# What About Collaboration?

Some suggestions for selecting the right (for you) researchers to collaborate with:

- ▶ Select co-authors that you are personally comfortable with.
- ▶ Research requires stamina and dedication, so your co-authors should have the same level of interest and dedication as you.
- ▶ Seek out collaborators with whom you can push through new frontiers – with different skillsets, knowledge of different methodologies, and applications.
- ▶ Collaborate with those that fuel your intellectual interests and that generate excitement and ideas about the research problem.

# Some Examples of My International Collaborations

## *Bellagio Research Team Residency March 2004*



# Some Examples of My International Collaborations

2005-2006, I was one of twelve Science Fellows at the Radcliffe Institute for Advanced Study at Harvard University.

Professor Daniele visited me for several months there and we worked with Professor David Parkes of Harvard on dynamic networks.



# Some Examples of My International Collaborations

In March 2008, I was a Fulbright Senior Specialist in Business Administration at the University of Catania, Italy.

Professor Patrizia Daniele and I organized a workshop on complex networks, and I gave several lectures, plus reviewed the curriculum in operations research there.



# Some Examples of My International Collaborations

In May 2008, I organized the Workshop: Humanitarian Logistics: Networks for Africa, under the auspices of the Rockefeller Foundation's Bellagio Center Conference Programs; <http://hlogistics.isenberg.umass.edu/>

## *Humanitarian Logistics: Networks for Africa*



Rockefeller Foundation Bellagio Center Conference, Bellagio, Lake Como, Italy

May 5-9, 2008

Conference Organizer: **Anna Nagurney**, John F. Smith Memorial Professor  
University of Massachusetts at Amherst

# Some Examples of My International Collaborations



## *Virtual Center for Supernetworks*





# Some Examples of My International Collaborations



Teaching a PhD course segment at the School of Business, Economics and Law in Gothenburg on Operations Management and Supply Chain Network Theory in the Fall of 2012

Collaborations may also enable you to receive funding for your research.

This could enable more trips to conferences, more student support if you become a professor, etc.

# What About Writing a Publishable Journal Article?

First, you need to determine whether or not you have a result that is publishable.

Do you have something new to say? How significant is the result?

**What is your contribution** – is it to theory, a new methodology, an empirical examination of an important issue, new insights and inferences, a new conceptual framework, or novel applications? Do you have a well-done survey paper that you have authored (these, when published, tend to be highly cited)?

Remember, in writing your paper that it will be reviewed by 2 – 4 reviewers and will also be looked over by the Associate Editor and/or Editor and you must keep the audience in mind.

Reviewers are busy people, most work for free for the good of the journal and profession, and you need to capture their interest quickly.

Care and attention must be paid to the writing and exposition.

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**Contribution** – Be very clear as to what your contribution is to the literature. Make sure that your contribution is evident right up-front. You must capture the interest of the reader – analogy to a novel (but non-fiction) that keeps the reader turning pages chapter by chapter, section by section.

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**Expression** – Strive for excellence in writing. Make sure that the paper is well-organized, formatted properly, free of typos and errors, the results are well-documented and explicated, and the manuscript is in the journal format and that it also “looks good.” Figures and tables should be carefully drawn and formatted. All this speaks to your professionalism.

## Important Points, continued:

- In a modeling (quantitative paper) we, typically, will have a model section as Section 2, followed by an analysis section, an algorithm or additional methodological discussion, numerical examples and/or empirical analysis. There may also then be a discussion on managerial implications.

One must understand the reality in developing a good model, and it must be theoretically sound. Check whether or not your model reflects reality once it is written up and throughout the development of it.

According to Professor Egon Balas of Carnegie Mellon University:

“Facing a real-world problem, my first approach is to try to capture its essential features into a model that is manageable, even if the answer is far from an accurate representation of it. In other words, to get going, I settle for an imperfect representation. Then I set out to refine by adding those features which can be accommodated without making the problem unmanageable.”

## Important Points:

- Send your manuscript to the right journal

Many rejections are the result of a manuscript and journal mismatch between the submitted paper and the journal's scope or mission. You should have the journal in mind early on in the writing of your paper.

- You should only submit your manuscript to one journal at a time. Your advisor or colleagues can help you to identify an appropriate journal. Look at your citations and if several come from a specific journal – that may be a good potential publication outlet.

## Important Points, continued:

- **Do include a nice cover letter**

Many authors don't realize the usefulness of cover letters. The letter can further emphasize the importance of the contributions in the paper and can also suggest reviewers for your manuscript. Also, done more rarely, authors can suggest that certain people not review the manuscript for fear of potential bias or may provide recommended reviewers. These may (or may not) be used.

- **Specific journals have certain styles for their papers in terms of the organization.** In looking at other papers in the journal you can find what other authors have done and the style that they have followed. Sometimes there are more specific instructions on the journal webpages. A typical sequence of paper sections may include: title, abstract, introduction, literature review (or this may be within the introduction), sections with results, summary and conclusion section, acknowledgments, followed by the references.

## Important Points, continued:

Once your paper is finished you send it to your targeted journal.

The Editor-in-Chief (EIC) will decide if it is appropriate for the journal and, if so, will send it to an Associate Editor (AE), who, in turn, will send it out for review (2-4 reviewers).

You will need to be patient (patience is a virtue) and if the process works well you should receive reports back on your paper in 3-4 months. (I have had to wait as long as 12 - 14 months even with prodding....)

Some journals use double blind reviewing, that is, the reviewers don't know who the authors of the paper are and vice versa.

# The Competitive Environment

The demand for getting papers published by authors in high quality journals exceeds the supply of journal pages available.



# Supply vs. Demand for Publishing

## Supply

There are about 10 high quality (top) ranked journals in any a field, each with 12 issues per year publishing 6 articles per issue.

The aggregate journal supply is  $10 \times 12 \times 6 = 720$  articles per year.

## Demand

Worldwide there are about 500 research departments in a field, each with roughly 5 researchers who aspire (may be urged) to publish (at minimum) 1 paper per year in a top ranked journal.

The aggregate demand is  $500 \times 5 = 2,500$  articles per year.



# The Competitive Dilemma Faced by an Author

How do we bridge the gap?

The supply is 720 journal articles per year, whereas the demand by authors is for 2,500 (at minimum) journal articles per year.

This is a challenging (impossible) situation.

Some ideas (suggested by Professor Bezalel Gavish of Southern Methodist University):

- ▶ Do research and publish with other authors, then each author can count it in his reports.
- ▶ Submit only high quality research results.
- ▶ Try to develop new methods to evaluate the research potential of faculty members (more for administrators and universities).

Some of my suggestions: Recognize those who receive awards, give keynote speeches, get grants, deliver invited seminars, write books, contribute OpEd publications, even affect policy through the writings and communications, etc.

## Important Points, continued:

- Don't panic

The overwhelming majority of initial journal manuscripts are rejected at first.

- Read the reviews carefully

In fact, anything aside from a “reject,” is a positive review. These include:

- ▶ Accept as is: happens rarely, although it does happen.
- ▶ Accept with revision: This means that you need to only make some minor changes.
- ▶ Revise and resubmit: This may require (a lot of) work but the journal, reviewers, and/or Editor are still interested in your paper!
- ▶ Reject and resubmit: Although this is clearly not as good as a revise and resubmit, “they still are interested in your paper!”

Some reviewers may recommend submitting your work to a different journal.

If a revision isn't invited following the initial rejection, many new authors may toss the manuscript and vow to never write again. Instead, do read the reviews carefully and determine why that decision was made.

If the research needs more studies or if the methodology needs to be changed somehow, if you have a sincere interest in the area, do these things. You can resubmit it as a new paper, noting the differences in the cover letter.

Also, keep in mind that, quite often, unfortunately, a journal will reject an article because it is too novel or too new for its time!

If you feel that it is valid and good, then by all means, send it off to another journal – you must believe in yourself.

# Even Nobel Prize Winners Have Had Their Papers Rejected



**Paul Samuelson**  
**1970 Nobel Laureate**



**Kenneth Arrow**  
**1972 Nobel Laureate**



**James Tobin**  
**1981 Nobel Laureate**



**Harry Markowitz**  
**1990 Nobel Laureate**



**Paul Krugman**  
**2008 Nobel Laureate**

An editorial in *Nature*, a top scientific journal, stated that it had celebrated the 2003 Nobel in Medicine awarded to Paul Lauterbur, only to have him remind them that the paper had been first rejected and then he appealed the decision.

The article, “How Are the Mighty Fallen: Rejected Classic Articles by Economists” by Gans and Shepherd, published in the *Journal of Economic Perspectives* in 1994, is based on a survey of 140 leading economists including Nobel Prize winners and Bates medal winners. The article is available online:  
<http://pubs.aeaweb.org/doi/pdfplus/10.1257/jep.8.1.165>

Paul Samuelson, the Nobel laureate, acknowledged rejections of some articles of his that are classics. Many “let off steam” in relating their rejection experiences, according to Paul Krugman, also quoted in the article, who later went on to also get a Nobel prize in Economic Sciences, as had Samuelson. The article has a list of articles and their authors that were rejected and where they were eventually published.

The *Nature* editorial concludes with:

Nevertheless – a final moral – rejected authors who are convinced of the ground-breaking value of their controversial conclusions should persist. A final rejection on the grounds of questionable significance may mean one journal has closed its door on you, but that is no reason to be cowered into silence. Remember, as you seek a different home for your work, that you are in wonderful company!

- Don't delay making the revisions

If you are invited to revise, do it thoroughly and professionally. Reviewers can at times ask for too much, so authors should take each suggestion into consideration, but decide themselves which to implement.

- Be diplomatic

In preparing your response to the reviewers to accompany the revision make sure that you respond item by item and you are diplomatic.

By sending your paper to a journal, you may be asked to review 1 or 2 papers in return.

Do this job well. You may be recognized by appointments to journal editorial boards.

In addition, you can keep up with the literature, in part, by reviewing articles.



It is important to present your research at seminars and at conferences. In this way you can get valuable feedback. Such venues also give you opportunities to network. **Acknowledge those who help in your paper.**



You may meet journal Editors or Associate Editors. Do make a point of talking to them about your exciting research.

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By adding to knowledge, you further the human enterprise.

Also, high quality research enhances education and teaching and your organizations benefit, too.



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- ▶ **You must know, understand, and appreciate reality:** Deep understanding of problems will enhance your models.
- ▶ **Collaborate with the right people (for you):** As noted by Professor Charles Corbett of UCLA: contribution, motivation, and expression are all critical to a publishable paper and "these are multiplicative, not additive."

# Some Further Readings, Perspectives, and Sources

[1] Bezalel Gavish, How to Publish in High Impact Journals, presentation, November 2012, Malaysia:

<http://www.ais.utm.my/wp-content/uploads/2012/11/How-to-Publish-in-High-Impact-Journals.pdf>

[2] Kathryn Hewlett, How to Publish Your Journal Paper, 2002, American Psychological Association:

<http://www.apa.org/monitor/sep02/publish.aspx>

[3] Bin Jiang, How to Do Research: Advice from Stellar Scholars in the POM Field. Journal of Operations Management: Operations & Supply Management Forum:

<http://wpcarey.asu.edu/JOM/upload/Essay5-HowToDoResearch.pdf>

[4] Peter E. D. Love, Even Nobel Laureates Get Papers Rejected: Views from the Field.

<http://www.sustainablehealthybuildings.org/PDF/workshop/2012>


# THANK YOU!



## The Virtual Center for Supernetworks

Supernetworks for Optimal Decision-Making and Improving the Global Quality of Life

Home About Background Activities Publications Media Links What's New Search



**AAAS - Boston  
February 17, 2013  
Dynamics of Disasters**


**The Virtual Center for Supernetworks** at the Isenberg School of Management, under the directorship of Anna Nagurney, the John F. Smith Memorial Professor, is an interdisciplinary center, and includes the Supernetworks Laboratory for Computation and Visualization.

**Mission:** The mission of the Virtual Center for Supernetworks is to foster the study and application of supernetworks and to serve as a resource to academia, industry, and government on networks ranging from transportation, supply chains, telecommunication, and electric power networks to economic, environmental, financial, knowledge and social networks.

**The Applications of Supernetworks Include:** complex networks and decision-making; critical infrastructure from transportation to electric power and the Internet; financial, economic, and social networks; energy and the environment; global supply chain management; corporate social responsibility; risk management; network vulnerability, resiliency, and performance metrics; ecological networks; humanitarian logistics and healthcare.

**Announcements and Notes from the Center Director**  
**Professor Anna Nagurney**

Updated: March 25, 2013

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**Publications**

On a Paradox of Traffic Flowing

Environmental Impact Assessment of Transportation Networks with Degradable Links in an Era of Climate Change

Anna Nagurney, Qing Qiang, and Ludovic V. Nagurney

For more information, see: <http://supernet.isenberg.umass.edu>  
Special thanks to my doctoral student, Dong "Michelle" Li, for assistance with some of the graphics in this presentation.