

“The power of diversity: women's leadership in STEM fields.”

The role of Innovators and Innovation

Judith Giordan

AMMCS Women in Science Symposium

August 2013



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www.jgiordan.com & www.ecosvc.com

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The quantum divided basins: A new class of quantum subsystems

Farnaz Heidarzadeh, Shant Shahbazian*

Issue

Article first published online: 12 MAY 2010

Topos Analogues of the KMS State

Joseph Ben Geloun^{1,2,*} and Cecilia Flori^{1,†}

¹Perimeter Institute for Theoretical Physics, 31 Caroline St, Waterloo, ON, Canada

Inversion of quasiseparable Vandermonde-like matrices via displacement operator

Vadim Olshevsky, Sirani Perera

AFM study of forces between silica, silicon nitride and polyurethane pads

Igor Sokolov^{a, b}, , , Quy K. Ong^a, Hasan Shodiev^a, Nina Chechik^c, David James^c, Mike Oliver^c

Quantum Physics

Sequential attacks against differential-phase-shift quantum key distribution with weak coherent states

Marcos Curty, Lucy Liuxuan Zhang, Hoi-Kwong Lo, Norbert Lütkenhaus

Phys. Fluids **24**, 054104 (2012); <http://dx.doi.org/10.1063/1.4717954> (14 pages)

Spatial linear disturbances in a plane wall jet

Lars-Uve Schrader¹, Catherine Mavriplis¹, and Luca Brandt²

¹Department of Mechanical Engineering, University of Ottawa, Ottawa, K1N 6N5 Canada

²Linné Flow Centre, KTH Mechanics, SE-100 44 Stockholm, Sweden

[View Map](#) 

Metallic nanoparticles on waveguide structures: effects on waveguide mode properties and the promise of sensing applications

T. Cheng,¹ C. Rangan,^{1,*} and J. E. Sipe²

Zero–Hopf bifurcation in a hyperchaotic Lorenz system

Lorena Cid-Montiel · Jaume Llibre · Cristina Stoica



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21st-Century Scientific Innovation—A New Contact Sport



- Needs a *diverse* approach for success
- Requires full commitment, participation and skill *by everyone*

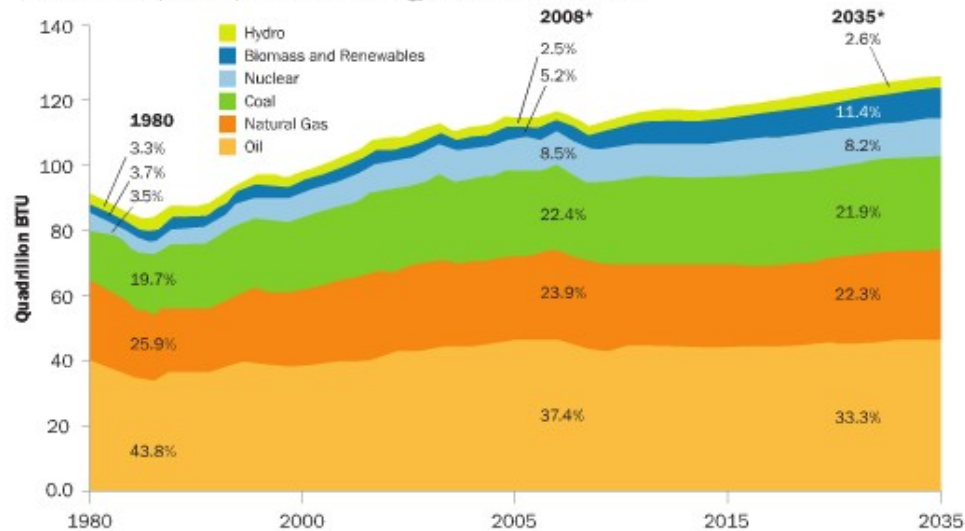
THE PROBLEMS ARE COMPELLING...

And skilled people are needed with deployable technical solutions....



Future U.S. Energy Demand

The U.S. will require 14 percent more energy in 2035 than in 2008.



*Excludes non-biogenic municipal waste and net electricity imports. Source: EIA, AEO 2009 Tables A1 and A17.



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The Innovator Solution

Scientists and engineers



...are the key to the solution!!!



The Innovator Solution

“Business Case” for Diversity



Creates

- Operational
- Reputational
- Financial

INNOVATION

Value

NOT a compliance exercise



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The Innovation Solution

Deployable scientific solutions are needed to address major global issues



Innovation *Working* Definition

Innovations are...

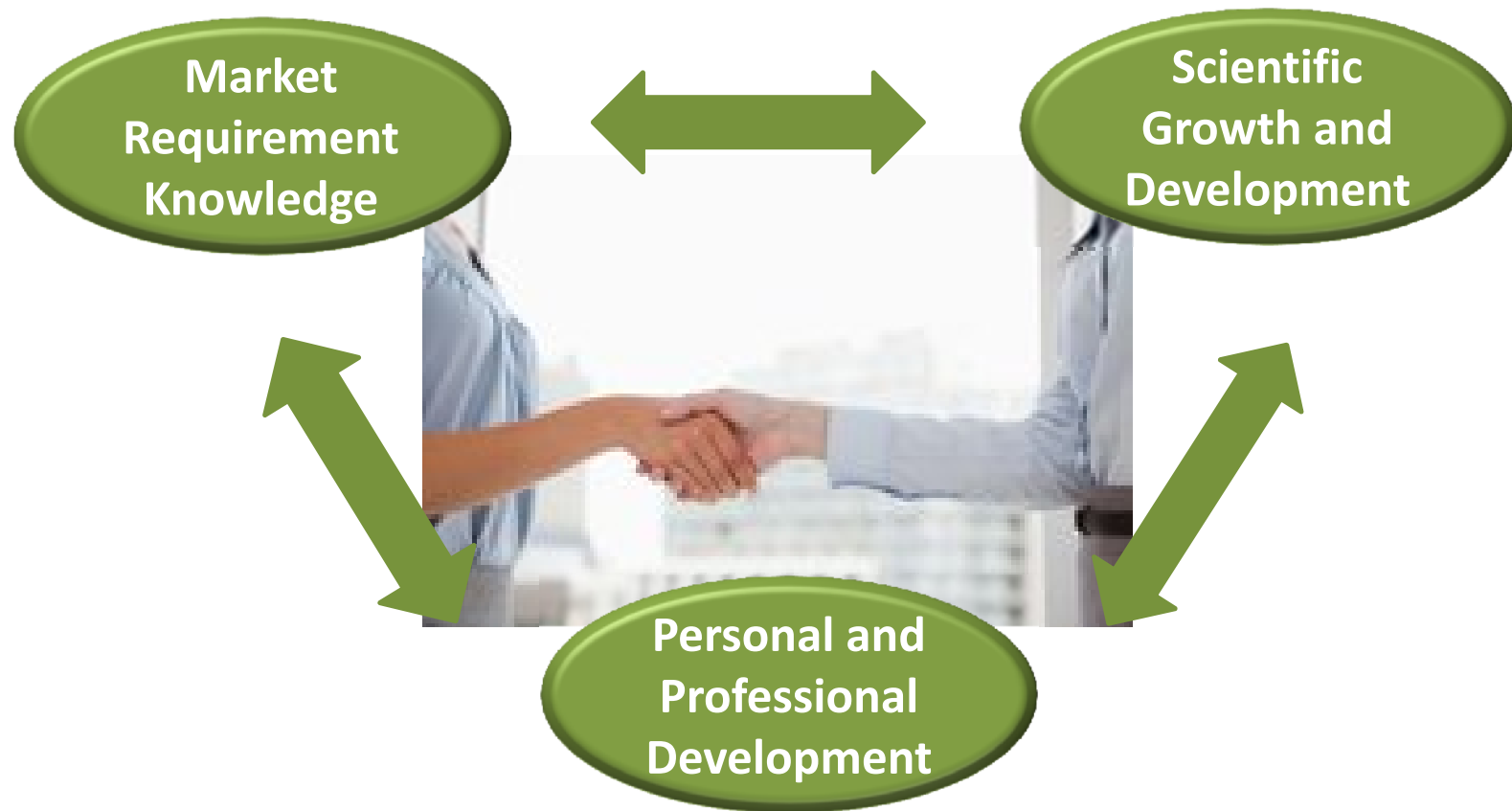
results translated from concept to practical use and deployed effectively as solutions to market, business and global needs...



<http://www.onr.navy.mil/en/Science-Technology/Directorates/office-innovation.aspx>



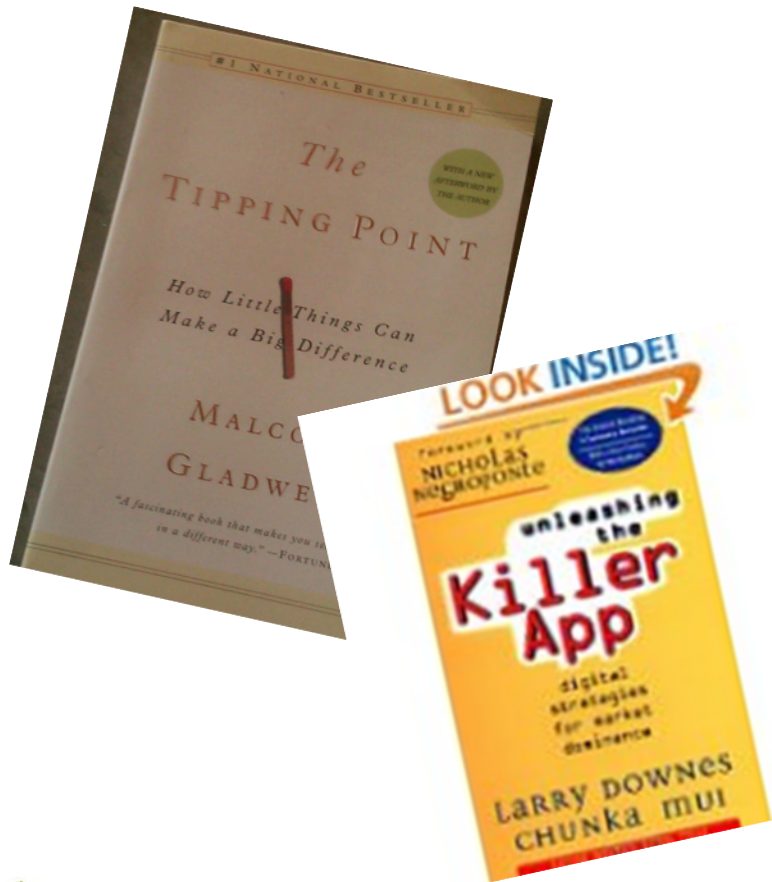
Success **REQUIRES** embracing the many faces of diversity



Be the change we want to see in the world



Takes a lot of “users” to change... But adapt we must...



Utility

Metcalfe's
Law

$$\text{Utility} = \text{Users}^2$$

Users



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Women are the most valuable and underutilized resource in the US (and GLOBAL) economy

- Largest purchasing cohort in the consumer base*
 - Add value-extractable input to new products and services
- Start the lion's share of new businesses
- Comprise 51% of the population overall
 - 46% of overall labor force
- Constitute the largest untapped talent pool for new scientists and engineers
 - 23% of the S&E labor force

*Janice Reals Ellig, Ilene H. Lang, Getting from a good to a great board: you can do it through gender diversity. [Directors & Boards](#), Fall 2008; <http://www.directorsandboards.com/html/4thQtr2008contents.html>. The remainder of the data are from the Bureau of labor Statistics.



We're on the MOVE...

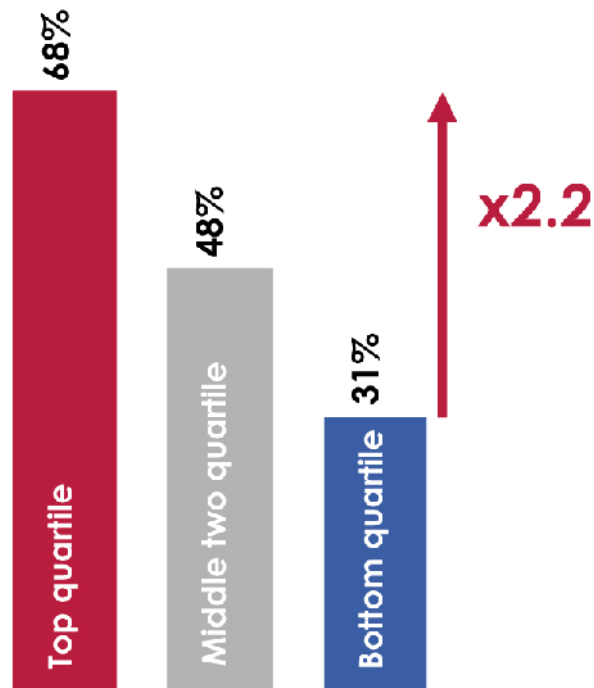
- Work, career, globality
 - By 2010 control 60% of country's wealth
 - Solo women's (25-44) market \$200B by 2006
 - "Current rate of social change women won't reach "parity" with men until 2270" ...not waiting
 - "Continued intransigence of large companies (reluctance to promote women)" leads to choosing smaller and more flexible companies
 - Starting their own companies
 - working for women (more women work for women owned companies than for the Fortune 500)
 - Investments BY women IN women
 - Rise of women-centered economic activism – companies that buy from and sell to women



Megatrends for Women, John Naisbitt and Patricia Aburdene, Diane Books Publishing Company (March 1998)

Women INNOVATORS and LEADERS Make the Difference

Gender diversity improves the probability of having an above-average EBITDA%



Source: McKinsey & Company, 2007

- *American companies would do well with more senior women. And the world would do better with more women entrepreneurs!*

Fixing the Economy? It's Women's Work.
By Katty Kay and Claire Shipman
Washington Post
Sunday, July 12, 2009



More Facts... Pepperdine University

- **Fortune 500 firms with the best records of putting women at the top are...**

18 to 69 %

more profitable

<http://www.washingtonpost.com/wp-dyn/content/article/2009/07/10/AR2009071002358.html>



More Facts... Catalyst

- Companies with **three or more women on their boards...**

...outperformed the competition on all measures by at least

40 %

<http://www.washingtonpost.com/wp-dyn/content/article/2009/07/10/AR2009071002358.html>



More Facts... Center for Venture Research at the University of New Hampshire

- 2007 submitted proposals to angel funds in the US

9% vs. 92%

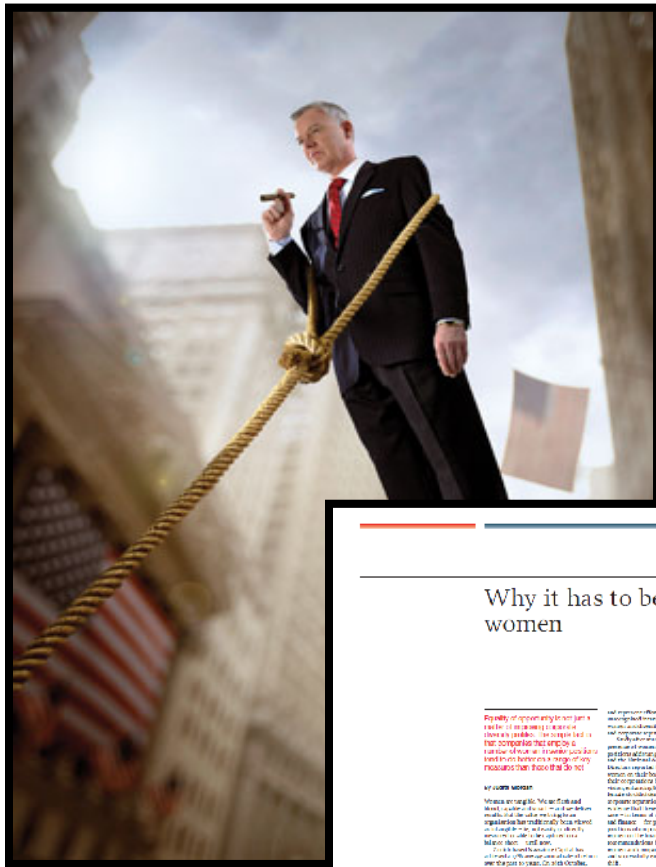
Women vs. Men

...but women received funding at equal rates to men

~14%



Diversity = Innovator and Innovation Success



- Diversity improves
 - Operations, reputation, finance
- This is why
 - No single expert is better than an *informed, knowledgeable* and diverse group.
 - It's in the math!

The Wisdom of Crowds

Wisdom of Crowds, James Surowiecki, Doubleday, 2004. ISBN 0-385-72170-6
Why it has to be women, Judith Giordan, Intangible asset magazine, Jan-Feb 2010



Monetizing (In)tangibles

Actions for Women

- **Build Value**
 - Personal
 - Organizational
- **We've Met the Enemy – and She is Us**
 - Show up
 - Stay
 - Ask



We've Met the Enemy..and She is Us?

Show Up

- 30% of male post-docs expected their wives to make career concessions...

....15% of female post-docs expected the same from their husbands.



EMBO Reports 8:977, 2007

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We've Met the Enemy..and She is Us?

Ask

- Women *expect* lower salaries than men for the same jobs
- Men *expect* to earn more than women

... **13 percent** more than women during their first year of work; **32 percent** more at their career peaks



Women Don't Ask – Women and the gender Divide; Babcock and Leschever;
<http://www.womendontask.com/stats.html>

We've Met the Enemy... and She is Us?



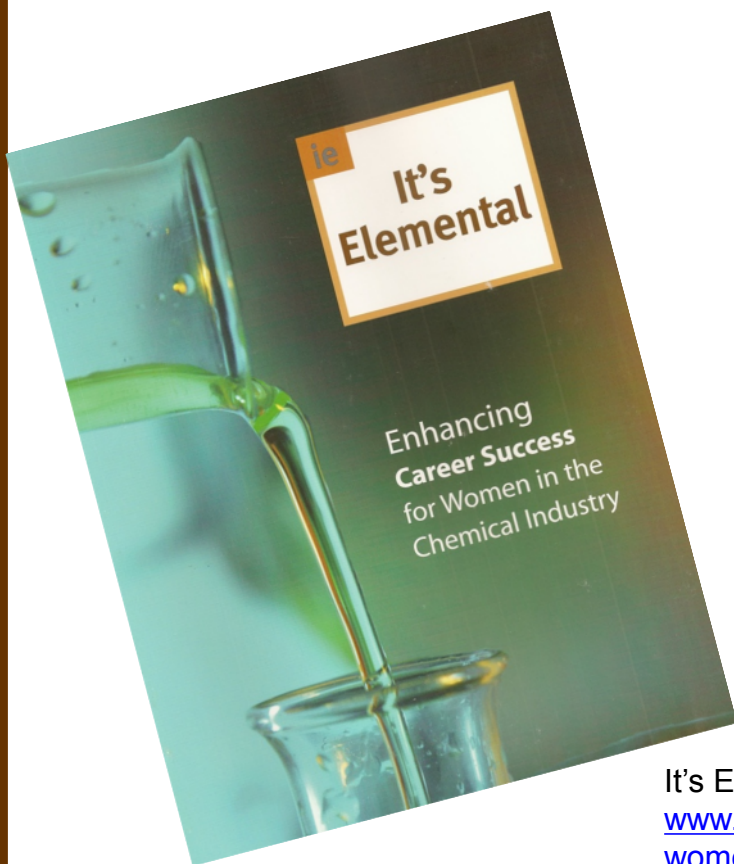
We've Met the Enemy – and She is Us



- **CHANGE THE DIALOGUE... and *change* the game**
 - Personal
 - Business



Confidence



- Strong links between actual success (e.g., salary, position) and attitudes and beliefs

It's Elemental: Enhancing Career Success for Women in the Chemical Industry
www.ecosvc.com/library/2013/7/11/its-elemental-enhancing-career-success-for-women-in-the-chemical-industry
Fassinger/Giordan



Male-female differences

Perceptions

- Male managers
 - More level playing field for women
- Female managers
 - More supportive of women
- Male and female managers
 - Overestimate home-work stress experienced by women.

It's Elemental: Enhancing Career Success for Women in the Chemical Industry

www.ecosvc.com/library/2013/7/11/its-elemental-enhancing-career-success-for-women-in-the-chemical-industry.

Fassinger/Giordan



DON'T SEETHE... act



Spare yourself and everyone else from FALSE MODESTY...

And potentially your personal angst...

But how do I do this????



I'm only a woman!

*I will be accused of
being aggressive...*

No one will listen...

*I don't have enough
DATA...*

*They'll say I am being
that word that RHYMES
WITH WITCH.....*



July 29, 2013

HUFF POST  GIRLS IN STEM

THE BLOG | *Featuring fresh takes and real-time analysis from HuffPost's signature lineup of contributors*

HOT ON THE BLOG
Michael Smerco
Jason Whitlock

 **Judy Giordan**
Managing principal at a venture development and investment firm

GET UPDATES FROM JUDY GIORDAN
   

Why Bragging Is Good For Women

Posted: 07/29/2013 12:56 pm 

Love it...

http://www.huffingtonpost.com/judy-giordan/why-bragging-is-good-for-women_b_3623772.html

Be Proud of it...

Understate it with confidence...



21st-Century Innovation—A New TEAM

Contact Sport



1999 US Women's Soccer Team

Prize Winning Research Team for Medical Discovery: Sunderland Univ



So what do we do to realize our potential...

**LEARN FROM OUR
SISTERS who
have DONE IT...**

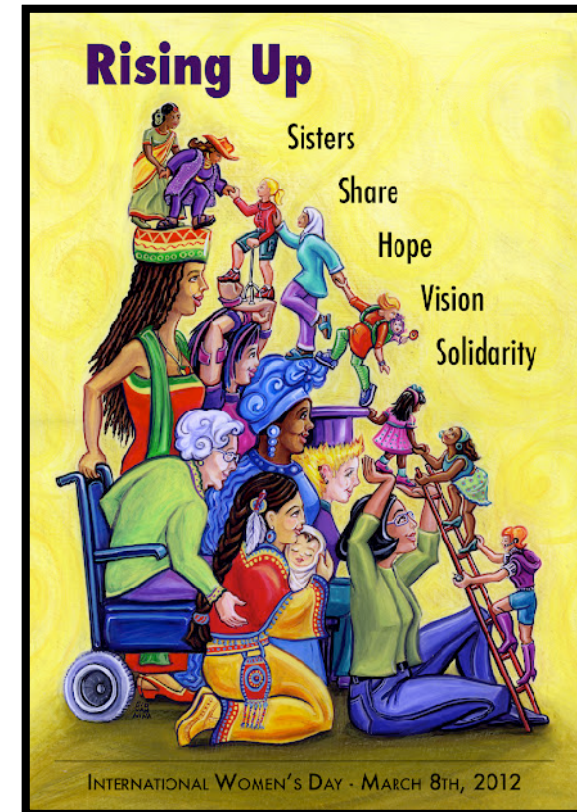


***If I have seen further than
others, it is by standing upon
the shoulders of giants.***

[Isaac Newton](#)



And succeed... when we help each other



THANK YOU.....

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Leadership in STEM fields.”**

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