

# STATISTICS

## Newsletter<sup>©</sup>

Volume 20, No. 1

Winter, 2001

### Chair's Message

by Janice Shade



Congratulations to everyone involved in this year's Fall Technical Conference. As always, the conference proved to be a huge success, with many compliments

given to the organizers, coordinators, speakers and short course presenters. Clearly a job well done. Next year's conference will be held on October 18-19 at the Royal York Hotel in Toronto, Canada.

The Youden Address speaker, Geoffrey Vining, impassioned listeners with his speech challenging the statistics community: to take action; to unify for the sake of the discipline; to re-evaluate current curriculum with more emphasis on application. His speech made an impression on the participants of our Long Range Planning Meeting (LRP) held on October 13-15 in Minneapolis. It overviews the ideas and tactics discussed during the LRP meeting.

#### Long Range Planning Meeting

I would like to give special thanks to everyone who participated in the LRP meeting. We are especially grateful to Tom Swails and Bill Rolfes for graciously donating their time to the Division. This is the second LRP meeting Tom facilitated. Without his leadership, we would not have accomplished so much in such a short time. For those of you who are interested,

Tom Swails is the founder and principal in an independent consultancy. (Please see the insert for Tom in this issue for more details).

The LRP meeting is held every 3-5 years to assess the current state of Division activities and evaluate whether these activities support our Long Term direction. The process begins with reviewing our current mission and vision to determine whether each supports an area of inspiration for the Division.

In assessing our Vision, it was noted that there were 7 key areas that the participants found to be important for delivering value to our members, beginning with an excited and active Division infrastructure, to forming alliances and delivering the right products and services. Next, some of the "Underlying Contradictions" that prevent us from achieving our vision were identified. These included the lack of volunteers, the changing environment, the need to communicate

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### Editor's Corner

by Sandy Capone



I would like to add my congratulations to that of others for David Bacon's winning the Hunter Award. And my thanks to Geoff Vining for his 2000

Youden Memorial Address. The presentation was appreciated by those attending the Fall Technical Conference in October in Minneapolis, and is included in its entirety in this issue of the Newsletter.

I am sure that by the time you read this issue of the Newsletter it will have been decided who the next President of the United States will be. Right now, the Electoral votes from Florida are still up for grabs. The problems that have resulted from the

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### Inside This Issue

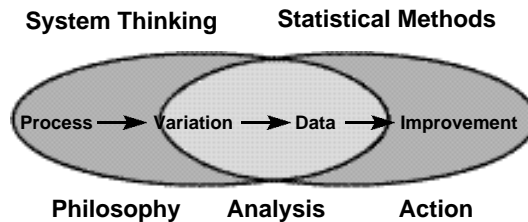
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## MISSION

- Promote Statistical Thinking for Quality and Productivity Improvement.
- Serve ASQ, business, industry, academia and government as a resource for effective use of Statistical Thinking for quality and productivity improvement.
  1. Our primary customers are Statistics Division members.
  2. Other key customers are:
    - a. Management
    - b. Users and potential users of Statistical Thinking
    - c. Educators of the above customers
- Provide a focal point within ASQ for application-driven development and effective use of new statistical methods.
- Support the growth and development of ASQ Statistics Division members.

## VISION

### Statistical Thinking Everywhere



## DESIRED DIVISION END-STATE

- Our members will be proud to be part of the Division.
- Our Division's operations will be a model for other organizations.
- We will be a widely influential authority on scientific approaches to quality and productivity improvement.

## PRINCIPLES

- Our customers' needs will be continuously anticipated and met (i.e. customer focused rather than customer driven).
- Our market focus for products and services is weighted as follows:
  1. Greatest weight on intermediate level.
  2. Nearly as much weight on basic level.
  3. Much less weight on advanced level.
- Focus on a few key things.
- Balance short-term and long-term efforts.
- Value diversity (including geographical and occupational) of our membership.
- Be proactive.
- Recognize that we exist for our customers.
- View statistics from the broad view of quality management.
- Apply Statistical Thinking ourselves; that is, practice what we preach.
- Uphold professional ethics.
- Continuously improve.

## STRATEGY

- Design and deliver selected useable products.
- Have a strong and vibrant Division infrastructure.
- Demonstrate the broad effectiveness of Statistical Thinking.
- Integrate Statistical Thinking into educational curricula.
- Develop a vibrant information communication system.
- Influence key decision makers.

## Disclaimer

The technical content of material published in the ASQ Statistics Division Newsletter may not have been refereed to the same extent as the rigorous refereeing that is undergone for publication in **Technometrics** or **J.Q.T.** The objective of this newsletter is to be a forum for new ideas and to be open to differing points of view. The editor will strive to review all articles and to ask other statistics professionals to provide reviews of all content of this newsletter. We encourage readers with differing points of view to write to the editor and request an opportunity to present their views via a letter to the editor. The views expressed in material published in this newsletter represents the views of the author of the material, and may or may not represent the official views of the Statistics Division of ASQ.

## Criteria for Basic Tools and Mini-Paper Columns

### Basic Tools

Purpose: To inform/teach the "quality practitioner" about useful techniques that can be easily understood, applied and explained to others.

Criteria:

1. Application oriented/not theory
2. Non-technical in nature
3. Techniques that can be understood and applied by non-statisticians.
4. Approximately three to five pages or less in length (8 1/2" x 11" typewritten, single spaced.)
5. Should be presented in "how to use it" fashion.
6. Should include applicable examples.

Possible Topics:

New SPC techniques  
Graphical techniques  
Statistical thinking principles  
"Rehash" established methods

### Mini-Paper

Purpose: To provide insight into application-oriented techniques of significant value to quality professionals.

Criteria:

1. Application oriented.
2. More technical than Basic Tools, but contains no mathematical derivations.
3. Focus is on insight into why a technique is of value.
4. Approximately six to eight pages or less in length (8 1/2" x 11" typewritten, single spaced.)  
Longer articles may be submitted and published in two parts.
5. Not overly controversial.
6. Should include applicable examples.

### General Information

Authors should have a conceptual understanding of the topic and should be willing to answer questions relating to the article through the newsletter. Authors do not have to be members of the Statistics Division.

Submissions may be made at any time to the Statistics Division Newsletter Editor. All articles will be reviewed. The editor reserves discretionary right in determination of which articles are published.

Acceptance of articles does not imply any agreement that a given article will be published.

# CHAIR'S MESSAGE

Continued from page 1

the benefit of using statistical tools and methodologies to management, and the existing conflict between the applied and theoretical statisticians. These helped define the strategic direction, discussed below.

## Improving Our Organizations Effectiveness

Within these changing times, people have less time to volunteer for a non-profit professional organization. Downsizing results in fewer people to do more work. And, it seems that employers are less likely to support any outside involvement that may detract from their employees productivity. These pressures affect a person's willingness to commit to a volunteer organization.

The Division has never been very good at attracting, or utilizing volunteers. There is no formal procedure for volunteer engagement. Over the years, many people filled out volunteer forms, and were never contacted. This must stop. Within the next year, new procedures will be instituted to place volunteers in areas that excite them.

At present time, there is a 5-year commitment if one wants to Chair the organization. In light of current business trends, it is unrealistic to assume one can commit to this length of time. (Just think of the amount of change in your life in the past 5 years.) To lessen the burden of commitment of becoming an Officer, the Division will propose a 3-year rotation of Chair-Elect, Chair and Past Chair. The Secretary and Treasurer will remain as Officers of the Division but will not be mandated to move into the Chair-Elect position. The Chair Elect will be selected from the entire assemblage of committee, tactical plan or council members.

Finally, we need to look at the massive hierarchy that has been created over the years, and "delete some of the boxes." It was always thought that for a project to flourish, a new hierarchy of several positions is required. There are advantages to this

form of organization; however, there are also drawbacks. For example, communication between groups can more easily break down, and a silo approach can occur. Over the next few months, we will evaluate every job position in the organization to determine whether: it is required; it is better served under a different umbrella; it is needed across all facets of the organization. Projects will be more fluid, hopefully attracting more volunteers that want to work on specific short-term tactics or projects.

I have one last thought on volunteering. During my involvement with the Division, starting as newsletter editor, I have experienced several changes and disruptions in my life: corporate downsizings, post graduate studies, community, house, and company travel. Not only did I find the time to volunteer, but I have enjoyed every minute of it. There is no other way one can network with renowned statisticians from academia and industry. Becoming an active member also improves your leadership, teamwork, management and strategic skills. These skills can be utilized during your entire life. With mergers and downsizing inevitable, these opportunities are invaluable.

## Merging Business Needs with Academic Direction

Gone are the days when a statistician can sit at a desk and spend the day analyzing data. Even in the most high tech industries, if a statistician cannot communicate with management, their job will be in jeopardy. We need to understand that both Theoretical and Applied Statistics are equally important, and both have their place in today's competitive academic and business environment. Emphasizing only theory in our MS and PhD programs, is excellent for preparing a student for a life in academia, but tends to sell them short for a career in the services or industry. The "One Size Fits All" method of teaching is antiquated, just as is the traditional role of the statistician.

Conversely, management does not embrace the benefits of statistics as the driver for process, financial and

sales improvement. Whether retail, service or manufacturing, many CEO's do not understand that minimizing variation, even if it means spending money for improvements, has a huge positive impact on the bottom line. Perhaps part of this is our fault: failing to learn the business language so that we can communicate our technology to organizational leaders. Only when this is done, will the tools that are so near and dear to us, be embraced at the highest levels of the organization.

One of the results of the LRP meeting is to create an action team, made up of experts, leaders and volunteers to develop and execute the plans for educating statistics practitioners for business. Crazy? Maybe. But in the years that I've been involved with the Statistics Division, I've participated in numerous discussions about the idea that more emphasis is needed on developing expert Applied Statisticians. This will be one vehicle for such a forum.

## Expanding Our Influence

The Division needs to do two things better in order to expand our influence: Market and Partner. Both are paramount in attracting enough volunteers to get the work done, and both are required to ensure that the right strategies and tactical plans are in place. A Marketer is required to help sell our products, services and image.

The Division has a unique advantage of being part of ASQ because of its tie to Quality. There are many disciplines that can and should use statistics on a daily basis. Marketing our tools, methods and philosophy for process improvement, and partnering with other divisions, organizations and disciplines to demonstrate this improvement is something we need to do better.

It would be wonderful to have 100+ participants at the next Long Range Planning Meeting. Perhaps some of the items discussed above will be of interest. Please contact me or Bob Mitchell, if you are interested in getting involved. Our contact information is in this newsletter, or on the website.

## EDITOR'S CORNER

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close race in Florida (and other states) are very much statistical in nature, and they can be avoided in the future through the use of a little "statistical elbow grease." I think of the voting process as being a measurement process: a process that measures the "will of the people."

First, assume that there is only one voting process that takes place throughout a state (this is never true). And, also assume that there is a real, but unknowable (this is true) will of the people in the state regarding their choice for President. Now, if an election for President takes place and the voting process is perfect, then the will of the people will be known, and the state's Electoral votes can be given to the winner of that state's election. But we know this is never the case: there is no such thing as a perfect process. And if the will of the people were constant throughout many elections using the same voting process repeatedly, the results would be different each time; and there would be possible biases. To avoid these problems, the voting process needs to be characterized with regard to its precision and accuracy, before the election takes place.

In the same way the precision and accuracy of a measurement process used in a manufacturing facility can be known, so too, can the characteristics of a voting process be understood. If the voting process is not accurate (biased) then it would need to be "fixed." A voting process that favors one candidate over another is not useable. And then as long as the variability of the voting process is known the process can be used fairly: if one candidate receives enough votes ("enough" is calculated and known by all before the election) then he is declared the winner; if the difference in votes is smaller than the "noise" of the voting process, no decision is made on the basis of vote count

(otherwise, instead of being the will of the people, the winner will, in effect, be chosen at random). In an election where the winner is uncertain, there needs to be a contingency plan: the state legislature determines the winner; a second election takes place; a hand of poker is played (New Mexico?); or multiple recounts are made (this actually works if most of the variability in the voting process is made up of random counting errors).

Voting process characterization, if undertaken, would help remove bias and would provide a fair decision making process whenever the outcome of an election is too close to call. Life is interesting (I think) when a problem and its solution are statistical in nature.

Regrettably, this is the last issue of the Newsletter that I will be editing. The folks that make the Statistics Division the strongest division in ASQ are great. Thanks to each of you.

## STATISTICAL THINKING

Statistical Thinking is a philosophy of learning and action based on the following fundamental principles:

- All work occurs in a system of interconnected processes,
- Variation exists in all processes, and
- Understanding and reducing variation are keys to success.

Statistical Thinking is a way of thinking, a thought process, rather than a method for calculating. The Statistics Division Vision "Statistical Thinking Everywhere" incorporates the interaction and strong interdependence between the philosophy of Statistical Thinking and the body of knowledge called Statistical Methods.

**Thomas E. Swails**  
**Woodbury, MN**  
**[tswails@uswest.net](mailto:tswails@uswest.net)**  
**651-578-3532**

**Tom is an organizational effectiveness leader focused on strategic planning, organizational development, change and transition management, and coaching. Work includes long-range planning, organizational assessment and design, team building, team training, and conflict management. Tom brings over 15 years of experience working with executive teams, operating committees and cross-functional teams in business, non-profit, and community organizations.**

**Tom's training includes work at National Training Labs (NTL) and the Covey Leadership Center. He is a certified facilitator in Drexler-Sibbet's *Creating and Sustaining High Performing Teams*, Steven Covey's *Seven Habits of Highly Effective People* and *Principle-Centered Leadership*, Richard Lieder's *Creating Team Mastery*, and Rummler Brache Group *Business Process Reengineering*.**

# David Bacon Receives ASQ Statistics Division's Hunter Award



**David Bacon**

The 2000 William G. Hunter Award was presented to David W. Bacon at the Fall Technical Conference (FTC) in Minneapolis, MN. The Statistics Division of the American Society for Quality (ASQ) established the Hunter Award in 1987 in memory of the Division's founding chair to promote, encourage and acknowledge outstanding accomplishments during a career in the broad field of applied statistics. The attributes that characterize Bill Hunter's career - consultant, educator for practitioners, communicator, and integrator of statistical thinking into other disciplines - also characterize Dave's career.

At the award presentation, Dave was described as follows:

"Throughout his career, Dave has integrated statistical thinking and methods into numerous areas of science and engineering through his teaching, research and administration. After completing his PhD in statistics at the University of Wisconsin, where he was a colleague of Bill Hunter, he joined DuPont Canada. In 1968, Dave returned to academia as an Associate Professor in the Department of Chemical Engineering at Queen's University. There he excelled as an instructor in the classroom and in a mentoring and tutoring role. His research contributions focusing on the development and application of statistical methods to chemical engineering problems have been published in an array of journals. Dave's career at Queen's went beyond the Department of Chemical Engineering when he served as Dean of Applied Science. His excellent communication skills allowed him to serve in this capacity with distinction for more than 10 years. Dave's accomplishments are not limited to Queen's University. He has developed and presented short courses in statistical methods internationally. He has consulted with companies in numerous industry sectors. Since his early retirement from Queen's University in 1999, Dave has been working as a consultant in Six Sigma."

Dave made the following remarks when he accepted the award:

"I want to begin by expressing my deep appreciation to the Hunter Award Committee of the Statistics Division of ASQ for this significant honor. I also wish to thank Tom Harris and John MacGregor, and others who nominated me for this award, along with those who provided additional support.

It is a humbling experience to review the list of previous recipients of the William G. Hunter Award. I am privileged to join their company.

This award has very special significance for me since, as some of you know, Bill Hunter and I were graduate students together in the early 1960s in what was then a newly established Department of Statistics at the University of Wisconsin in Madison. I would like to take a few minutes to share my recollections of Bill Hunter the statistician and Bill Hunter the man.

Bill began his graduate studies in Madison one year before I did, and he completed his program two years before me. This was an early indication of Bill's talent for leading the way for other aspiring statisticians.

He and I shared an apartment for eight months or so, and that was a truly memorable experience. He had some unique tastes, beginning with the stimulating art of the Swiss painter Paul Klee, and a fascination with military march music, especially at 6 o'clock in the morning. He introduced me to a new breakfast dish - dollops of ice cream topped with wheat germ. And I will never forget our regular nightcaps of Black Russians - we slept very well.

Even as a graduate student, Bill displayed many of the characteristics that set him apart as a superb practicing statistician. Above all, statistics was FUN for Bill, and the joy he generated in his professional activities (and in his leisure activities) was infectious to any that were lucky enough to be associated with him. A few of you here today, such as Lynne Hare, Jim Lucas and Steve Bailey, who attended the Gordon Research Conferences on Statistics in Chemistry and Chemical Engineering in the "old days", when Bill created and performed his unique skits, can attest to his rich and uninhibited sense of humor.

His creative use of GRAPHICAL SUMMARIES was another of his distinguishing traits. I still have one or two of his wonderful doodles that he composed during lectures that we attended together.

Bill's appetite for VARIETY in statistical challenges set a marvelous example for his colleagues and the many students from diverse fields of study whom he taught. Like our mutual Ph.D. supervisor, George Box, Bill shared his rich and varied consulting experiences from industry, government, and the academic world freely with anyone who showed interest.

His achievements as an educator, both within the university and beyond, are legendary. How many people teaching design of experiments have been stimulated by the 101 examples of designed experiments developed and conducted by Bill's students, which he summarized in a brief but wonderfully useful Technometrics paper many years ago?

In summary, Bill Hunter was the epitome of a professional statistician - brilliant, creative, inspiring, hilarious and kind. And he was an exemplary human being. I am truly honored to receive this award which bears his name."

The committee is soliciting nominations for 2001. Nominations must be received by June 30, 2001. Forms for the 2001 award are available from the William G. Hunter Award Committee Chair:

Nancy Belunis  
Merck & Co, Inc.  
One Merck Drive  
P.O. Box 100 WS3DE-20  
Whitehouse Station, NJ 08889-0100  
(908) 423-3423  
(908) 735-1106 (Fax)  
belunis@merck.com

# STATISTICS DIVISION LONG RANGE PLANNING MEETING SUMMARY

On October 13 – 15 following the Fall Technical Conference 14 members of the Statistics Division developed a new Long Range Plan. Tom Swails facilitated the process with help from Bill Rolfe who documented the results. The plan was developed looking five years into the future.

## KEY BREAKTHROUGH IDEAS

- 1. The paradigm shift from having an organization whose purpose is to “fill in the slots” the infrastructure, to one where the structure matches the overall strategy, and desires and talents of the membership.**
- 2. The changed relationship between business and academia. In the past, the Division wanted to influence the education system, (from the 1994 Long Range Plan) but no progress has been made. We acknowledged the need to work at higher levels to get the leverage and synergy between business and education for this to happen. The establishment of advisory boards and the work with strategic MBA programs are key new ideas.**

The accompanying figure summarizes the output of the meeting. You may want to refer to it as you read the descriptions of our new Practical Vision, the Underlying Contradictions and the Strategic Directions.

## PRACTICAL VISION

The Practical Vision is our attempt to express the future for Statistics Division. The Practical Vision describes what we think the Statistics Division will be like in the year 2005. The Practical Vision contains eight elements. By the year 2005 the Statistics Division will be identified by the following traits:

### **Statistical Thinking Integrated Into the Workplace**

Applied statisticians move into nontraditional roles like management. Quality practitioners advance statistical thinking. Statistical thinking and techniques are recognized as useful in all occupations.

### **Effective Applied Statistics Programs and Graduates**

Industry and academia collaborate to develop effective applied statistics curriculum.

### **Excited and Active Members**

The Statistics Division members are excited and involved as volunteers because of the wide range of activities and opportunities provided by the Division.

### **Education System Produces Statistically Literate People**

The Statistics Division is a contributor to foundational educational curriculum impacting K – 16 statistics training.

### **Recognized Leader in Effective Statistics**

The Statistics Division is a source of readily available information. It is recognized as the leader in applied statistics.

### **Flourishing Alliances with Other Organizations**

The Statistics Division is effective in reaching out with its expertise to other ASQ groups, non-ASQ organizations, industry and academia.

### **High Performing Infrastructure**

The Statistics Division innovatively operates its matrixed infrastructure through internet meetings and virtual conferences.

### **Enhanced Products & Delivery Methods**

The Statistics Division has a variety of effective new publications and short courses available to the members and to others. The materials are delivered in new innovative ways that minimize the cost and travel of participants in the short courses.

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# LONG RANGE PLANNING MEETING SUMMARY

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## UNDERLYING CONTRADICTIONS

Underlying Contradictions are inherent barriers we need to overcome to achieve the Practical Vision. In a perfect world inhabited by perfect people, everyone would enthusiastically work toward creating and then carrying out the best ideas, programs, and activities. Because this is not so, it is necessary to bring into focus those limiting factors that might come into play as we strive to move forward. Hence identified, it is possible to anticipate difficulties and prepare to deal with them beforehand or as they develop. The following Underlying Contradictions were identified at the meeting:

### **Statistics Division has poor marketing**

The Division has never had an effective marketing function possibly because marketing is not valued. The resulting consequence is that we may not have the right products and other organizations don't know we exist.

### **Statistics Division Jobs are not what people want to do**

Members have competing priorities so when asked to volunteer for a Statistics Division assignment the job had better be one that is compelling to the individual. Many times the volunteers are matched to inappropriate jobs.

### **Statisticians need to understand and communicate with business**

Industry is profit driven and our tools are not perceived as impacting the bottom line. The technical language of statistics isn't perceived to relate to business metrics.

### **Rapidly Changing & Complex Environment**

The Statistics Division has not adapted to the 21st Century environment. The infrastructure is bogging down progress. We are not using the tools of the Internet effectively.

### **Focus is on tools without balance on change**

The statistician often approaches problem solving with a "my tool will fix anything" attitude rather than realizing that resistance to change is normal and there are effective change management techniques that would help solve problems permanently.

### **Failure to identify and use key sources to accomplish our objectives**

There are competing priorities in industry and academia. The Statistics Division has not engaged the key decision makers to communicate our objectives and to solicit their help.

### **Existing conflict between theory and applications**

Academia seems to embrace theoretical rather the applied statistics. Industry and academia have not met in meaningful ways to address their competing priorities and interests.

## STRATEGIC DIRECTIONS

Following development of the practical vision and identification of the barriers to achieving that vision, specific strategic directions were identified which could move us towards our practical vision. Three strategic themes were identified and shown below with supporting explanation of their meaning.

### **Strategic Direction: Improving our organization's effectiveness**

#### **1. Fix infrastructure**

Create a "just do it" infrastructure. Clearly communicate the new Practical Vision, open jobs, and solicit and engage willing members to join in the accomplishment of the vision.

#### **2. Acquire change management skills**

Educate us in personal interaction and change management skills.

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# LONG RANGE PLANNING MEETING SUMMARY

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## **Strategic Direction: Educating statistical practitioners for business**

### **1. Merge business needs with academic services**

Assist business and academia in developing applied statistics curriculum for statisticians and practitioners. Work with an MBA program to develop an introduction to statistical thinking in their curriculum.

### **2. Understand and communicate with business**

Establish a board of advisors who have influential jobs in business. Use the board to help develop materials that will help us understand and communicate to management. Leverage six sigma as a means to the bottom line.

## **Strategic Direction: Expanding our influence**

### **1. Understand and communicate with business**

Establish a board of advisors who have influential jobs in business. Use the board to help develop materials that will help us understand and communicate to management. Leverage six sigma as a means to the bottom line.

### **2. Grow customers & revenue**

Determine how we can supplement the revenue we receive from member dues.

### **3. Market our services**

Consider hiring a professional marketer to actively market our key products and services.

### **4. Develop alliances**

Identify a target partner/alliance opportunity and develop it.

### **5. Find and fill gaps in product and delivery**

Make sure that our conferences and publications do a satisfactory job of promoting/advancing the journey to our Practical Vision.

## **77-Day Action Plans**

Several 77-day (through the end of the year) action plans were developed for things that were judged to provide the most short-term impact as noted below. The remaining action plans need to be developed in the near future.

## **Strategic Direction: Improving our organization's effectiveness**

1. Communicate the new plan and continuing progress.

2. Follow through on getting web master.

3. Evaluate and revise infrastructure as necessary.

## **Strategic Direction: Educating statistical practitioners for business**

1. Establish Action Team of Statistics Division experts/leaders and volunteers to develop and execute plans.

2. Develop a list of skills needed by Applied Statisticians.

## **Strategic Direction: Expanding our influence**

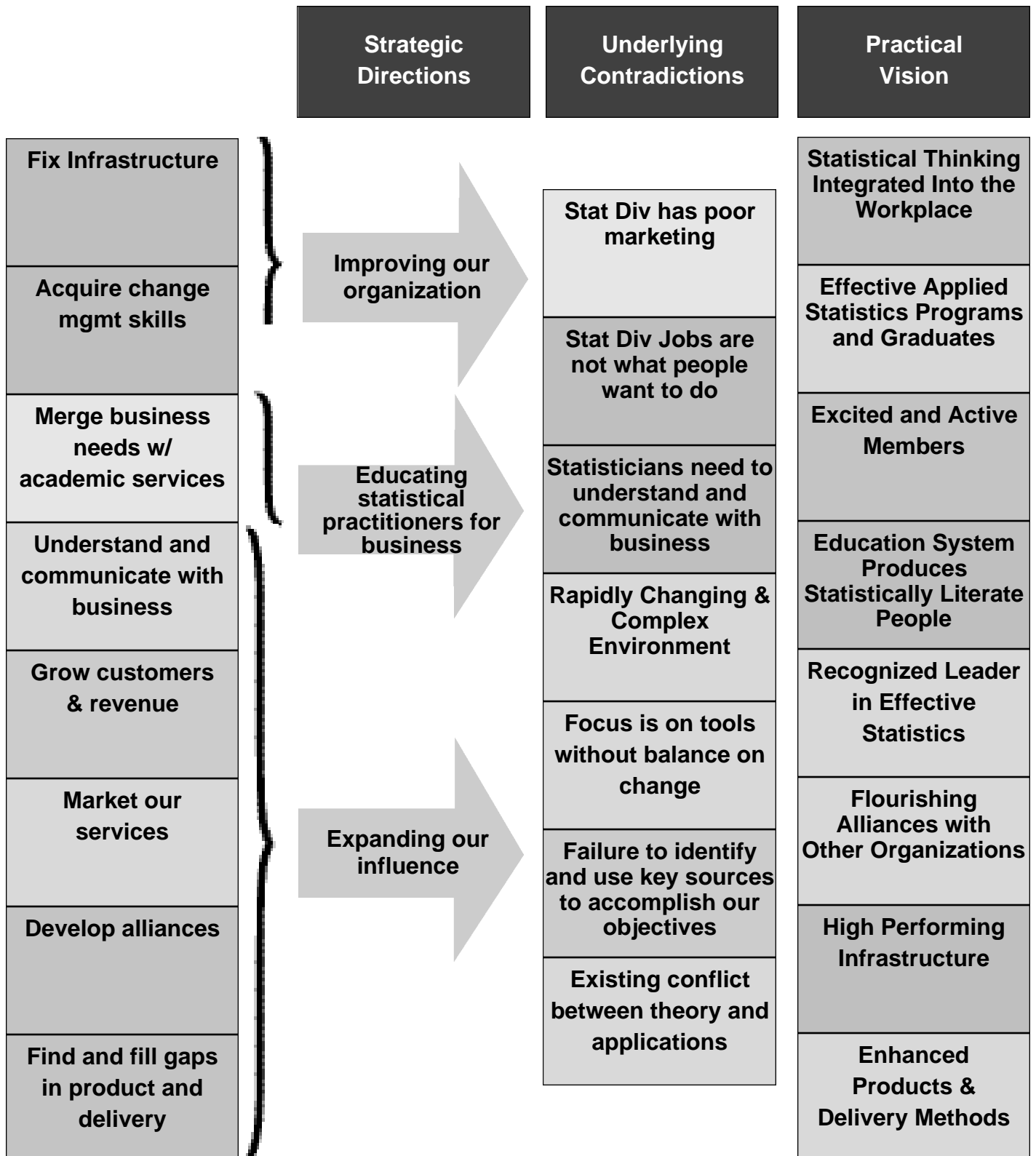
1. Leverage AQC and FTC to advance the strategic plan.

2. Get someone to lead marketing.

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# LONG RANGE PLANNING MEETING SUMMARY

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# Ellis R. Ott Scholarship For Applied Statistics and Quality Management

by Lynne B. Hare

The Statistics Division of the American Society for Quality is pleased to announce the availability of \$5000 scholarships to support students who are enrolled in, or are accepted into enrollment in, a master's degree or higher program with a concentration in applied statistics and/or quality management. This includes the theory and application of statistical inference, statistical decision-making, experimental design, analysis and interpretation of data, statistical process control, quality control, quality assurance, quality improvement, quality management and related fields. The emphasis is on applications as opposed to theory.

Year 2000-01 scholarship winners are:

Ana Aviles, Northwestern University  
Kevin Busby, University of Alabama  
Karla Gentner, Southern Methodist University  
Victoria Jordan, Auburn University  
Lixia Jiao, Rutgers University  
Dean DeCock, Iowa State University

During the last three years, scholarships have been awarded to 15 deserving students. Qualified applicants

must have a grade point average of 3.25 or higher on a 4.0 scale, or equivalent standing on another scale, in any field of undergraduate study. Scholarship awards are based on demonstrated ability, academic achievement, involvement in student or professional organizations, faculty recommendations, and career objectives.

Application instructions and forms should be downloaded from: <http://www.asqstatdiv.org/>

Forms for the 2001-02 academic year will be accepted only between January 1, and April 1, 2001.

The Governing Board is Dr. Susan Albin, Ms. Nancy Belunis, Dr. Galen Britz, Dr. J. Stuart Hunter, Mr. Tom Murphy, Dr. Robert Perry, and Dr. Ronald Snee.

For more information, contact:

Dr. Lynne B. Hare  
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200 DeForest Avenue  
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## Announcement and Call for Questions

### Statistics Division Session – 2001 AQC

The Statistics Division Session at the 2001 AQC is entitled:

#### Six Sigma: Breakthrough Strategy or Another Fad?

The panelists in this session will debate whether Six Sigma is a breakthrough strategy or just another fad. After a short position statement by each speaker the moderator will pose prepared questions solicited from Statistics Division members. Questions from the floor will be taken during the last 15 minutes.

The panelists are Stu Hunter, Geoff Vining, Steve Zinkgraf, and Joe Voelkel. Roger Hoerl will moderate the session.

The session is presently scheduled for  
**Monday, May 7, 4:00 - 5:30 p.m.**

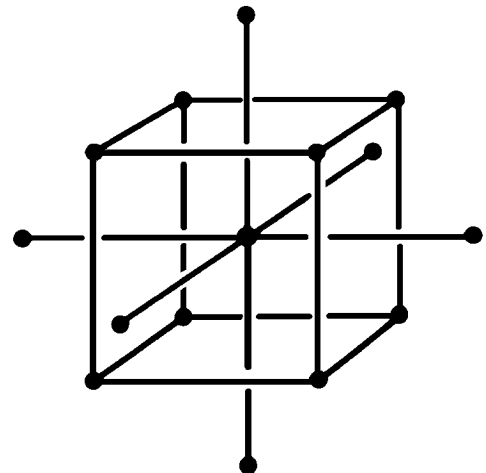
**Statistics Division members please submit questions for the panelists before April 1, 2001 to session coordinator Galen Britz:**

**By regular mail**

**1169 Lakewood Dr S  
Maplewood, MN 55119**

Or by email (preferred)

**[gnkbritz@concentric.net](mailto:gnkbritz@concentric.net)**



# CALL FOR PAPERS

## 45th Annual Fall Technical Conference

### It's Still Statistics & Quality: Challenges Old and New

October 18-19, 2001 • Royal York Hotel • Toronto, Canada

*Co-sponsored by:*

*American Statistical Association:  
Section on Physical and Engineering Sciences*

*American Society for Quality:  
Chemical and Process Industry Division Statistics Division*

With the turn of the century, much discussion has focused on problems professionals may face in the future. But what about problems in statistics and quality posed and considered important in the recent past, that have never been fully answered? What challenges in statistics and quality have been put forth, but remain unanswered? What attempts have been made at answering these challenges and in what direction have these attempts taken us? With these new directions, how will statistics "reinvent" itself in the coming century? With the advent of more powerful software, Six Sigma programs, etc., people should be looking to grow their expertise in new areas such as chemometrics, bioinformatics (an exploding field between biology, computer science and statistics), neural nets and pattern recognition for large data sets.

If you are interested in presenting an applied or expository paper in any of three parallel sessions (Statistics, Quality Control or Tutorial/Case Studies) contact any of the individuals listed below, preferably by e-mail. Work should be strongly justified by application to a problem in engineering, process/chemical industry or physical sciences and it should be relevant to the theme stated above. The mathematical level of the papers may range from none to what is used in the Journal of Quality Technology or Technometrics.

**Submission deadline is February 22, 2001.**

**Committee Members:**

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It is important to follow the abstract format. Papers are selected based on subject matter, technical correctness, usefulness, interest, clarity, and readability.

The program committee welcomes any suggestions for special session topics or speakers. If you have ideas, please contact one of the program committee listed on the Call for Papers.

**Abstract Format**

(IMPORTANT: Use Only a Single Page, please)

Title of Presentation

First Author  
affiliation  
phone number (day)  
Fax number  
paper mail address  
E-mail address

Second Author  
affiliation  
phone number (day)  
fax number  
paper mail address  
e-mail address

Third Author  
affiliation  
phone number (day)  
fax number  
paper mail address  
e-mail address

Presenter: Name of presenter

Keywords: Include 3 to 5 key words or phrases

Purpose: One sentence. To derive, prove, synthesize, review, present, inform, encourage, motivate, enlighten, exemplify, highlight, ...

Abstract

Try to include the following 3 components in the abstract:

1. Motivation or Background:
2. Description: Describe the work done.
3. Significance: Are there any improvements, applications, new abilities, new points of view, etc.? How will the status quo be changed?

Session Preference: (choose one)

- Statistics
- Quality Control
- Tutorial/Case Study

Where did you learn about the Call for Papers?

- Quality Progress
- ASQ-STAT newsletter
- electronic (where?) \_\_\_\_\_
- other (please explain) \_\_\_\_\_
- ASQ-CPID newsletter
- AMSTAT news
- On Q
- ASA-SPES newsletter

# ANNOUNCEMENT

## 2001 Gordon Research Conference on Statistics in Chemistry and Chemical Engineering

Williams College, Williamstown, MA

July 22-27, 2001

Web Site: <http://www.asaspes.org/GRC2001.htm>

### Information

The Gordon Research Conference on Statistics in Chemistry and Chemical Engineering focuses on new research directions in applied statistics and the analysis of chemical phenomena. It has met annually for half a century, drawing statisticians, chemometricians, chemists and chemical engineers from industry, government and universities around the world. Statistical interests typically lie somewhere between Technometrics and the Journal of the American Statistical Association, with the applied interests of the former and the technical depth of the latter.

Specific information on the conference, including possible emendations to the scientific program, can be found at <http://www.asaspes.org/GRC2001.htm>.

General information regarding application, registration fees, travel directions, conference site, etc. can be found at the Web site of the Gordon Research Conferences:

<http://www.grc.uri.edu/>.

### Posters

In addition to the presentations, this conference also offers a poster session. Keep in mind this opportunity to discuss your research with other people who work in the multidisciplinary arena of statistics in chemistry and chemical engineering. Further, it is an excellent way to involve young researchers in this prestigious conference.

### Application

Application may be made:

- On the GRC web site at <http://www.grc.uri.edu/attend.htm>
- By e-mail using the form available from <http://www.grc.uri.edu/emailapp.txt> or [app@grcmail.grc.uri.edu](mailto:app@grcmail.grc.uri.edu).
- By writing to the GRC office

The number of conferees is limited, so early application is encouraged.

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[grc@grcmail.grc.uri.edu](mailto:grc@grcmail.grc.uri.edu)

# W.J. YOUDEN MEMORIAL ADDRESS

*Presented at the  
44th Annual Fall Technical Conference  
Minneapolis, Minnesota  
October 12, 2000*

## A Call to Action

**Geoff Vining  
Department of Statistics  
Virginia Tech  
Blacksburg, Virginia**

I thank Janice Shade and the FTC organizing committee for inviting me to give this address. It is the greatest honor of my career as a statistician. Before I actually start my talk, I need to acknowledge Rudy Kittlitz and John Cornell for their help in providing some background information about Jack Youden, and Bill Woodall for reading the written version.

The basic theme for my talk today is that Jack Youden is an appropriate role model for today's industrial statisticians. As a group, industrial statisticians face many exciting challenges and opportunities as we enter the 21st century. Jack Youden's life gives us a shining example to emulate as we face the great issues of today.

### **Jack Youden: A Model for Today**

Jack Youden was originally trained as a chemical engineer, completing his B.S. in 1921. In 1924, he earned his Ph.D. in physical chemistry from Columbia University. He then worked at Boyce Thompson Institute for Plant Research. While there, he became very frustrated at the current practice of experimental design. His response was to do something about it. He went to England and worked with R.A. Fisher, the leading expert in experimental design of that time. Youden went on to do pivotal work in experimental design. People still discuss and use his Youden square designs. He became a strong missionary for good statistical practices. In 1948, Youden joined the National Bureau of Standards, where he did important work. Jack Youden was someone who appreciated the fundamental role statistics can play in industry, and again, even more importantly, he did something about it.

### **Brief History of Industrial Statistics**

Tracing the basic origins of industrial statistics back to the 1950s, three papers stand out, for various reasons, from that time.

First is Box and Wilson (1951), which appeared with discussion in the *Journal of the Royal Statistical Society, Series B*. I love the fact that it is Mr. Box and Dr. Wilson. The paper which appeared before Prof. Box had earned his doctorate, outlines the basics of response surface methodology, which is fundamental to industrial experimentation. The paper is a classic and should be required reading for all industrial statisticians.

The second paper of interest is Duncan (1956), which outlines the basic economic model for Shewhart control charts. I readily grant the controversy over economic design. What I find remarkable about this paper goes back to a comment someone made at a dinner for the *Journal of Quality Technology* Editorial Review Board in 1998. This person pointed out that Duncan's paper was probably the last good paper on quality control to appear in the *Journal of the American Statistical Association*. No one at that dinner could come up with another.

The third paper is Box and Hunter (1957), which I understand is Stu Hunter's dissertation. This paper fills in much of the mathematical detail for response surface methodology. In some sense, it is a sequel to Box and Wilson (1951). What is most notable in my mind is that this paper appeared in the *Annals of Statistics*.

These three papers represent seminal work in industrial statistics. What is remarkable is that all three were published in very well respected, mainstream statistical journals. How often today do we, as industrial statisticians, find papers of abiding interest in the mainstream statistical journals?

From the early 1960s into the 1980s, we saw several trends in industrial statistics. First, there were a small number of companies with large, centralized statistics groups. The Applied Statistics Group at Du Pont under Don Marquardt certainly comes to mind. Many companies employed individual statisticians. Consequently, most industrial statisticians were extremely isolated. Such meetings as the Fall Technical Conference and the Gordon Research Conference were important forums and played an important role in developing appropriate networks among industrial statisticians. Industrial overhead allowed enough time for several people from industry to be very active researchers. Academic research seemed in sync, particularly with the arrival of Technometrics, which allowed both industrial and academic researchers to share insights and developments.

Starting in the 1980s and continuing throughout the 1990s, trends began to change. First, there was the impact of Deming and continuous quality improvement. Shewhart control charts became a widespread industrial tool.

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Companies began to see the importance of statistics. The corporate response to Deming led directly to the rise of consultants. Very few companies had enough statistical expertise to lead the charge towards constant and continuous improvement. Many companies turned to a new class of consultants, who ranged from well qualified to hucksters. Many consulting firms had virtually no background in industrial statistics; however, they did have much experience in the "soft" interpersonal skills. These companies emphasized team building, interpersonal dynamics, and the "seven tools," of which the Shewhart control chart was the most complicated and most often mistaught. It is interesting to note the evolution of the American Society for Quality Control, which was a true technical society, to the American Society for Quality, which is more a management association.

During the 1980s, traditional industrial statistics topics began to lose favor in most academic statistics departments. Programs long known for developing solid, productive industrial and applied statisticians began to concentrate on more mathematical topics within statistics. At the same time, companies began to tighten overhead. As a result, fewer people in industry could find the time to publish. How many Ph.D. statisticians went to industry with an understanding that they could spend 5 or 10% of their time on research projects, only to find out that reductions in overhead precluded them from working on anything except a paying project?

## Current State of Industrial Statistics

Probably the most important program, for at least the near future, to come out of the 1990s is Six Sigma. Six Sigma, which originated at Motorola in the 1980s, was the basic quality improvement strategy that led to Motorola winning one of the first Baldrige Awards. Many people at Motorola were instrumental in developing Six Sigma. Certainly, Mikel Harry was one of these people; however, there were many more, most of who have not sought the limelight. There are several stories on how Six Sigma and Mikel Harry were introduced to General Electric. The key point is that General Electric represents one of Six Sigma's greatest success stories and is one of the greatest proponents for the spread of Six Sigma. It would be very wrong to give all, or even most of the credit to Mikel Harry. I submit that the real heroes of Six Sigma at General Electric were Gerry Hahn, Bill Tucker, Fred Faltin, and Roger Hoerl, all well-known and well-respected industrial statisticians. These are the people who brought the real technical foundation to the General Electric Six Sigma program, and it is this technical foundation that led to General Electric's success.

My point is not to trivialize Mikel Harry's contribution; rather, it is to put it into perspective. I must admit that seeing Mikel Harry on the cover of Quality Progress did disturb me. I feel he gets far more credit than he deserves.

However, in all fairness, he did make two fundamental contributions. First, he did get the attention of upper management. We, as industrial statisticians, must understand the vital importance of access to the true decision makers. Without this access, industrial statisticians are marginal players. We are simply technical support and not key to the business. Second, Harry tied the results of quality improvement to the bottom line: to how much money is saved or generated. The fundamental purpose of business is to make money. We are nothing more than technical support unless we can justify our efforts in terms of actual profit.

We are now beginning to see the passing of the generation that founded and nurtured industrial statistics. Who do we currently have to replace such people as Lloyd Nelson, Don Marquardt, Gerry Hahn, Ron Snee, Bill Hill, and Jim Lucas?

Lloyd was the statistician at the Nashua Corporation when Deming became popular. No person, other than Deming is cited more often in Deming's *Out of the Crisis*. Lloyd was Deming's model for an industrial statistician. Lloyd was the last editor of *Industrial Quality Control* prior to its split into *Quality Progress* and the *Journal of Quality Technology (JQT)*. He was the founding editor of *JQT*, and he continues to remain active in *JQT's* operation. Don Marquardt headed the Applied Statistics Group at Du Pont for many years and has served as President of the American Statistical Association. Gerry Hahn has worked for years at General Electric, leading General Electric's statistical activities. Ron Snee started his career with the Applied Statistics Group at Du Pont and later became a vice-president for NYNEX before it merged with Bell Atlantic. He is now a Six Sigma consultant. Bill Hill has worked as a leading industrial statistician for years at Allied-Signal, now Honeywell. Jim Lucas retired from the Applied Statistics Group at Du Pont.

These are all people who

- Worked in industry
  - Published in industrial statistics journals
  - Won the Brumbaugh Award, (goes to the paper in an ASQ journal that makes the greatest contribution to the development of industrial applications of quality control)
  - Won the Shewhart Medal, (ASQ's highest yearly award)
- These people have provided significant leadership to the industrial statistics community. They were all cut from the same mold as Jack Youden.

It is important to consider the current state of academia today. Most statistics departments aspire to emulate Stanford and Berkeley. Thus, most statistics departments put greater emphasis on publishing in the more theoretical statistics journals. The application is more an excuse for the mathematics rather than the mathematics serving as a basis for the solution of a real problem. Academic statisticians working on basic industrial problems often do not

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get the same rewards and recognition within their departments as those who work either in mathematical statistics or computationally intensive statistics. The Department of Statistics at the University of Florida is a prime example. I spent eleven years in that department and have many friends there. Recent retirements and the hiring of a new department chair have begun a series of changes to this department. Historically, the department at Florida prided itself on a balance between statistical theory and applications. Rumors suggest that the department is moving to become the "Cornell of the South" or the "Berkeley of the Southeast."

Mainstream statistical journals, in general, do not have industrial statisticians as associate editors or as review board members. As a result, they often have no concept of industrial statistics problems and issues. A recent paper that appeared in the *Journal of the American Statistical Association* (JASA) is a prime example. I know many colleagues who refuse to submit papers to JASA. It is one thing to get your paper rejected; it is quite another to have your paper rejected on the basis of an uninformed review by people who actually work in other research areas.

Academic statisticians face huge pressures, now, to bring in major amounts of research money. Too often, at least on the statistical side of government granting agencies, the people making the decisions about grants know little or nothing about industrial statistics. A few years ago, Carnegie-Mellon received a huge National Science Foundation grant to work on industrial statistics. The results that I know about were all Bayesian and computationally intensive. I have heard of no results that led to practical solutions for real industrial problems. Frankly, academic statisticians face huge pressures to pursue the trendy topics that may bring in research money.

Where are the good industrial statistics departments today? Many of the departments historically known for producing good industrial statisticians long ago made the transition that appears to be taking place at Florida. Who are the academics that can replace George Box, Stu Hunter, Bill Hunter, Ray Myers, and Doug Montgomery (who is, by the way, nowhere near retirement)?

These are academics who: wrote articles useful to practitioners; consulted widely in industry; wrote important textbooks; won the Brumbaugh Award; and, except for one who died before he could be so honored, won the Shewhart Medal. And, these people have provided significant leadership to the industrial statistics community. In addition, they have played important roles in training today's industrial statisticians.

It is important to consider upper management today. My sense of upper management at most corporations is that it does not understand the need for improvement, and it is honestly prepared to commit substantial resources in the pursuit of improvement. However, it is often poorly

informed on where to go for help. Typically, members of upper management are not comfortable with technical issues, especially statistical issues. Even those who were technically trained are often uncomfortable with such issues because they have been in the management ranks, away from dealing with technical matters, for too many years. Upper managers speak the language of money, not statistics. Since they often are poorly informed on where to go for help and since they are not comfortable with statistical issues, they seek consultants with whom they are comfortable.

Professional consultants have an extreme range in technical ability from very good to truly horrible. The successful ones all speak the language of money, which makes them attractive to upper management. These consultants are business people themselves. They have a strong propensity to massive self-marketing. I fear that in some cases, these consultants spend more time and energy on self-promotion than on the proper application of the industrial statistics tools to solve their clients' problems! Most consultants do not publish in the peer-review literature. Several consultants tend to self-publish their work, avoiding the peer-review process. Two years ago in his Youden address, Doug Montgomery spoke eloquently about the role of peer-review in industrial statistics. Peer-review ensures that the techniques and methodologies advocated have sound merit. We do not need "cold fusion" in industrial statistics. Self-publication, combined with self-promotion, can lead to highly questionable practices. Some consultants actively disparage statistics and statisticians, saying that statisticians actually get in the way of improvement. These consultants leave the clear message that only they, the consultants, know the proper way. Almost all of the consultants tend to take far too much credit for what they really do.

The current reality is that industry needs academia and academia needs industry. They are in a highly symbiotic relationship where each individual's success depends on the others. The primary missions of most universities are: education; research; and outreach. The symbiotic relationship between industry and academia permeates all three areas.

Academic departments of statistics do the vast majority of formal statistical education of the people who go into industry, both as statisticians and as engineers. What will be the quality of this education as academic departments move further away from the historic areas in industrial statistics? Who will teach engineers and even statisticians the fundamentals? Industry must get involved with academic departments if it wishes to defend the quality of the students coming out of universities.

Here is a rather novel idea: have universities graduate "green belt" engineers and statisticians. A green belt should have sufficient training in appropriate statistical

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methodology to make an impact soon after being hired into industry. A retired vice-president from IBM once told me that he expected engineers to be trained in: Experimental Design; Process Control; and Reliability.

Certainly, these three areas should form the core for any "green belt" training. Engineering curricula usually require at least one capstone course. In the case of our green belts, such a capstone should involve participation in a real improvement project that leads to documented savings. Frankly, most universities could implement such a curriculum relatively easily. ABET, which accredits engineering programs, requires at least one course, or its equivalent, in probability and statistics. This green belt curriculum would probably require two statistics courses plus the capstone project, which should be an integration of both the engineering and statistical training. Unfortunately, the reality is that several obstacles lie in the way of any such program. I will discuss those obstacles (the least of which is finding qualified people to teach the courses) later.

The academic mission of research leads to the development of improved statistical methodologies. As corporations continue to cut back on overhead, and as they move to become "leaner and meaner," statisticians in industry are less and less able to do fundamental research, much less publish in such journals as *Technometrics* and *JQT*. In today's environment, industry is ever more dependent on the research provided by their academic industrial statisticians counterparts.

Academics do much of their outreach through continuing education programs. Historically, industry has compensated for the lack of university training in industrial statistics through training programs. Companies with large statistics groups often would conduct this training purely internally. Companies who lacked the critical mass of statistical talent would bring in people, often academics, from outside the company. Some university departments have learned that they can capitalize on this need for training and have started public short course programs specifically for people in industry.

Another form of academic outreach to industry involves assistance on hard, practical statistical problems, particularly as the cutbacks in overhead take their toll. People in industry often do not have the time to ponder what is the best approach for attacking a real problem. "Quick and dirty" is the best they can do. Academic researchers, however, do have the time and the talent to address these issues.

Academia also needs industry. As we have seen, industry is a major customer of academia's products, both students and research. As a consequence, industry must assume a major advisory role to academic departments of statistics. Failure to do so will increase the rate at which historically applied departments try to become theoretical departments of statistics. Industry needs to develop appro-

priate avenues to route important, practical research problems to the right academic industrial statisticians.

Finally, academic departments, across the country, face major budgetary problems. Industry can facilitate change in academia by becoming a strong, reliable source of funding, much like what occurs in engineering.

## Obstacles

First, consider the academic side. One major problem is academic arrogance. Too many academics still cherish the ivory tower. They do not want to be tainted by the real world. Their attitude to industry is too often, "Give us your money, and we will work on the projects we think you need. Please do not bother us by what you really want or need!" Accountability is not a concept many academics understand.

Academia tends to respond slowly. Academics work according to the academic calendar. Frankly, their first responsibility is to cover their classes and their research assignments. From an industrial perspective, academics tend to work at a glacial pace on industrial problems. Yet, the issue often comes down to priorities.

Changes in academia often require a large amount of "consensus." Academic institutions have large amounts of inertia. Many people do not understand the freedom that comes with being a faculty member. Faculty members do not have supervisors in the same sense that people in industry do. Before becoming a department head, someone told me that leading faculty is like herding cats. Generally, change only comes if it is truly compelled by some outside force.

Some changes require participation at the highest levels of administration. The green belt proposal is a prime example. At Virginia Tech, such a program would require the approval and the full participation of both the College of Engineering and the College of Arts and Sciences. Academics tend to protect turf. Engineering curricula are already packed with topics, many of which reflect nothing but tradition. Why are chemical engineers still required to take dynamics? Getting an engineering program to yield one course to the Statistics department is like asking someone to cut off his/her foot. Such a change could only result if senior management at companies that recruit at Virginia Tech demands it. If vice-presidents from Du Pont, Shell, and General Electric demanded such a green belt program and their companies would refuse to recruit from Virginia Tech unless it were implemented, the Provost would have the program in place over night. Short of such a demand, I doubt that Tech would implement such a program.

Finally, some changes in academia require significant funding. Grant expenditures form an important measure of the quality of research institutions. As pressure builds to increase grant expenditures, faculty members will commit more of their time to activities that will provide the biggest

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payback. In this environment, industry cannot complain about academia ignoring their problems if industry is unwilling to commit the financial resources required.

The primary obstacle on the industrial side is that the statistical points of contact are, at best, middle managers. Outside of the pharmaceutical industry, where the FDA requires statistics to be central to the business, where are the vice-presidents who are also statisticians? Don Marquardt was never a vice-president. He was very well respected, but he was never promoted to vice-president. Gerry Hahn is not a vice-president. Ron Snee was a vice-president, briefly. My father worked for Du Pont for many years. After the Du Pont family started to let non-family members run the company, the CEOs often were Ph.D. chemists or chemical engineers. Du Pont has many scientists and engineers as vice-presidents because these activities are considered central to the business. We can name countless companies that have engineers, accountants, and sales/marketing people as vice-presidents because these roles are considered central to the business. How many companies today consider industrial statistics so central to their activities that they feel compelled to have industrial statisticians serve as vice-presidents?

Industrial statisticians tend to rise to middle management but not higher. As a result, the people who understand the issues do not control money or policy. The people who control money and policy do not understand the real statistical issues. In this environment is it any wonder that so many consultants make so much money doing so little that is technically correct? Industrial statistics is too often viewed as purely technical support, lumped in with the latest human resources fad of the week. We cannot expect industrial statistics to command the true respect it deserves until we have industrial statisticians serving as vice-presidents. Then, and only then, will industrial statistics be considered as central to the business. I have a friend, who, when she reads this comment, will say, "But Geoff, I work daily with vice-presidents. They find what I do important." There is a huge difference between "important" and "central." "Important" can still be viewed as an overhead expense that can be cut at the drop of a pin. "Central" is exactly that. It is part of the company's core and not part of the overhead. Cutting overhead is viewed as cutting fat. Cutting the core is viewed as cutting bone and muscle. As long as industrial statistics is viewed as technical support, we should continue to see consultants making large amounts of money that should go to fund either industrial or academic efforts in industrial statistics.

## Road to Improvement

Industrial statisticians find themselves in an exciting, dynamic time. Clearly, there are major challenges, but there are equally major opportunities. The key to improve-

ment is an appropriate dialogue among the key players. Bob Hogg attempted to start such a dialogue in the late 1980s. He brought together top industrial statisticians from both industry and academia. Such specific recommendations for engineering statistics courses evolved from that conference. I submit that the Hogg Conference, although well intentioned, was a disappointment. More than ten years later look at the impact this conference had on engineering statistics courses: not much. The impact on the relationship between industry and academia is even less.

What are the lessons we can learn from the Hogg Conference? To have a significant impact on the actual state of industrial statistics, we need a conference where the true players are present. We need the real corporate decision makers, the vice-presidents. Even better would be to get the CEO's to attend. Our historic statistical contacts in industry do not have the clout necessary to lead the reforms. We also need the academic decision makers present. I as a department head cannot do much to achieve true educational reform, but provosts can. Provosts and deans are the academic decision makers, not department heads. It is important to keep in mind that vice-presidents, provosts, and deans are the decision-makers, but they do not understand the real issues. They can make things happen. Hence, they need the leading industrial statisticians, both in industry and in academia, to guide them as to what is important and what needs to be done. All four groups need to be involved in this dialogue. The Hogg Conference failed because the real decision-makers were not a party to the discussions. The dialogue outlined above will also fail unless there is strong commitment to the appropriate follow-up activities by all involved. We are talking about serious commitments of time and money, which is why the decision makers must be centrally involved. The keys to success are strong, committed leadership by both industrial and academic statisticians and strong, committed buy-in by all the players. We need some Jack Youdens to lead the way!

## References

- Box, G.E.P. and Hunter, J.S. (1957), *Annals of Mathematical Statistics*.
- Box, G.E.P. and Wilson, K.P. (1951), *Journal of the Royal Statistical Society, Series B*.
- Duncan, A.J. (1956). "The Economic Design of Control Charts," *Journal of the American Statistical Association*.

# Call for Interested Members

The Statistics Division has openings in several key positions. Filling them is critical to our being able to achieve our goals and Vision:

- **Membership Chair**

J.L. Madrigal, our previous Membership Chair has been elected to Division Secretary. The Statistics Division Membership Chair is responsible for coordinating the activities of our Regional Councilors and Section Liaisons in helping the Division be more effective at the Local level. The Membership Chair participates in the strategic planning process and helps deploy strategies and objectives to improve member recruitment and retention. Member satisfaction is a critical metric for the division Balanced Scorecard to measure our overall effectiveness.

- **Newsletter Editor**

Sandy Capone, our current Newsletter editor, has decided to pursue other interests and relinquish his role as Statistics Division Newsletter Editor with the publication of this edition of the Newsletter. The Newsletter continues to be our primary communication vehicle and principal product to the Statistics Division members. The Newsletter Editor works closely with the STAT division officers and the web master to communicate and promote division activities, products, and services.

- **Division Marketer**

Long-Range Planning recently conducted at the FTC in Minneapolis determined a critical need for a Division Marketer to help the Statistics Division enhance its image, and to help promote "Statistical Thinking Everywhere". The Marketer will work with division officers and lead tactical plans to identify new partnership alliances in education, business, industry, and with other professional societies to develop and improve the skill sets of applied statistical practitioners.

- **Publications Chair**

Our current Publications Chair has recently taken on new assignments from her employer and is unable to fulfill her duties as division Publications Chair. The Publications Chair coordinates the activities of the Newsletter Editor, Special Publication Editor, and leads the effort to develop, publish, and distribute new products such as our latest Improving Performance Using Statistical Thinking booklet.

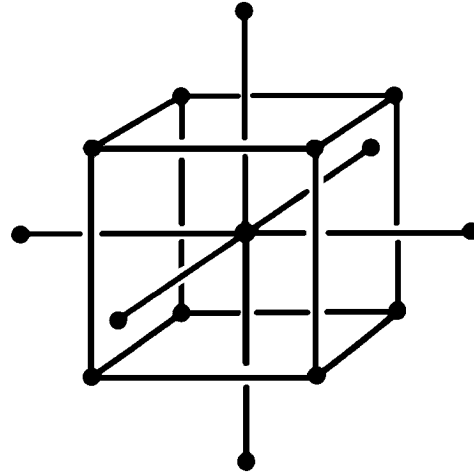
- **Education Committee Chair**

Our current Education Chair has expressed her intent to move onto other activities. The Education Chair works with the division officers to coordinate regional short course offerings and identify appropriate speakers/instructors.

- **Regional Councilors / Section Liaisons**

The Statistics Division has created the Section Liaison position, and redefined the role of the Regional Councilor to improve our effectiveness at the local level. We currently have a need for Regional Councilor Regions 3 (New Jersey and NE Pennsylvania), 4 (Canada), and 10 (Detroit). We wish to name a Section Liaison for each of the Top 50 highest density (in STAT members) local sections.

For more information about the various open positions please see the respective job descriptions, which are available in the STAT Operating Manual that is posted on our website at <http://www.asqstatdiv.org>. If you are interested in active membership in the ASQ Statistics Division please complete the "Interested Member" application that is available in the Newsletter and on the website, and mail to our Past Chair (address provided on the application).



## ASQ STAT DIVISION VOLUNTEER INTEREST FORM

If you wish to volunteer for any of the positions described, or included in the listing below, please complete this form and return it to:

Bob Mitchell  
 Building 220-9W-08, 3M Center  
 Maplewood, MN 55144  
 Tel. (651) 736-8684  
 Fax: (651) 736-9780

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Title: \_\_\_\_\_ Member No: \_\_\_\_\_

Address: \_\_\_\_\_  
 \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Email: \_\_\_\_\_ Membership: \_\_ Reg. \_\_ Sr. \_\_ Fellow

Education / Certifications / Experience: \_\_\_\_\_  
 \_\_\_\_\_

Time Availability / Company Support: \_\_\_\_\_  
 \_\_\_\_\_

Please check all committees of interest:

Education  Publication  Electronic  Membership

Standards  Awards  Examining  Certification

Program



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