

THE TEN COMMANDMENTS OF BUILDING A SUCCESSFUL RESEARCH CAREER



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Research Symposium*

Introduction

- **Somewhat presumptuous title???**
- **Subtitle for this paper -----**
“LESSONS LEARNED IN THE TRENCHES!”
- **Goals of the presentation**
 - **Not a review of my research career**
 - **Use the “Ten Commandments” analogy to illustrate some of the major insights I’ve gleaned during the development of my research career**
 - **Provide some useful information to guide your career development**
 - **Have some FUN!**

Commandment #1

*Thou shalt love thy “field of research”
with thy whole mind, heart, and soul*

- **Glory in science is an infrequent occurrence**
 - Lasker award
 - Nobel prize
 - Headline breaking news story
- **Minor achievements and small breakthroughs are invigorating**
- **Successes in science provide intermittent reinforcement**

Commandment # 1

Thou shalt love thy “field of research” with thy whole mind, heart, and soul

- **Reality of science**
 - Numerous challenges
 - Numerous frustrations
 - Numerous setbacks
- **One needs more than intermittent success**
- **One needs **PASSION** for one’s field of inquiry**

Case Presentation #1



- **Frank is a 65 y/o male who retired recently**
- **Avid gardener**
- **Has a beautiful lawn and a putting green in his backyard**

Case Presentation #2



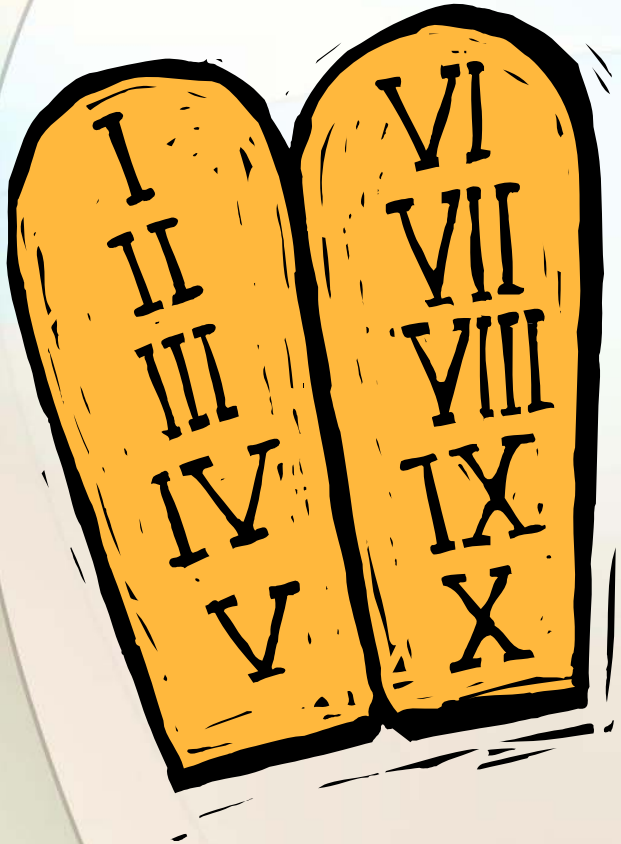
- His wife, Helen notices that his voice is becoming hoarse (May 1976)
- ENT Consult
- Diagnosis of laryngeal cancer
- Treatment
 - Radiation therapy
 - Surgery
 - Radiation therapy

Case Presentation #3



- Plans to learn esophageal speech
- January 1977 has a recurrence
- Severe pain and headaches
- Wife taught to administer morphine
- Frank dies in intractable pain (May 1977)

Commandment # 1 – Take Home Messages



- Have a passion for your field of scientific inquiry
- Passion supersedes all other considerations
- Passion for discovery must be linked to expertise in the subject matter and related areas of inquiry

Commandment # 2

*Thou shalt network with colleagues
and speak with accomplished
scientists*

- Importance of networking cannot be over emphasized
- One of the most efficient ways to remain at the “cutting edge” of a field of inquiry
- Facilitates the development of collaborations
- Allows one to expand one’s program of research
- Enables one to discuss research findings and get feedback

Advice On How To Network

- **One of the most efficient ways to network is to become an active member of a professional organization**
 - **Volunteer for a committee**
 - **Learn the process an organization uses to select committee members**
 - **Network with members of a committee of interest and express your desire to volunteer**
- **Need to speak with accomplished scientists**
 - **Some of these interactions occur by chance**

Networking with Accomplished Scientists



Dr. Barbara Walike Hansen

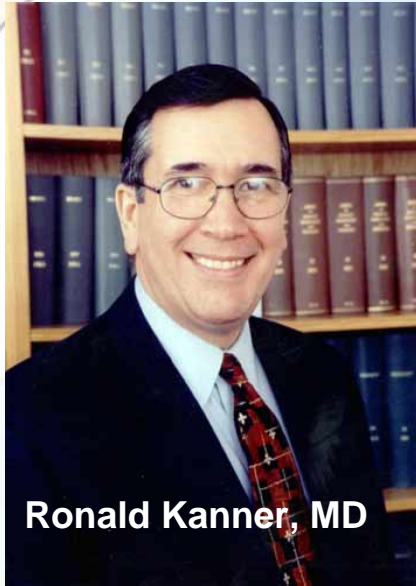
- Meeting during my Master's education in 1978
- Meeting during my doctoral education in 1987
- RWJ Clinical Nurse Scholars Program
- Interactions should be planned and purposeful

Commandment # 3

Thou shalt have a mentor(s) and be a mentor

- **Over the 30 years of my nursing career, I have been fortunate to have several mentors**
- **Need to consider what types of mentors one needs**
- **Need to seek out mentors with the expertise that you need at specific times in your career**

MY MENTORS



Ronald Kanner, MD



Jon Levine, MD, PhD



Marylin Dodd



Ada Jacox, RN, PhD

Advice on Mentors/Mentoring



- **Multiple mentors are needed for different aspects of your career**
- **Mentors should be chosen based on their ability to listen AND to tell you the HARSH REALITIES!**
- **Mentors should tell you what you need to hear to be successful**
- **Choose mentors from different disciplines**
- **Each of us needs to make a commitment to BE a mentor**
 - **That is the way to say “thank you” to your mentor(s)**

Commandment # 4

*Thou shalt network with the staff at the NIH
and at other funding agencies*

- **This commandment took me a long time to learn**
 - “Visceral” reaction to calling the NIH
- **Critically important to develop a relationship with Program Officers at funding agencies**
 - Advice about funding mechanisms
 - Feedback on discussion from the study section
 - Provide guidance for future research
- **Share progress as your research unfolds**

Commandment # 5

*Thou shalt budget more time for
EVERYTHING than one estimates
one needs*

- Time is the ENEMY!
- Time keeps moving faster
- Productive scientists develop timelines
 - Create a schedule
 - Stick to the schedule

Commandment # 6

***Thou shalt honor the members of
your research team, your
research staff, the staff at your
study sites, and your study
participants***

- **No one gets to stand in a place of honor and receive a prestigious award by themselves**
- **Teamwork is critical to success**

Research Team Members



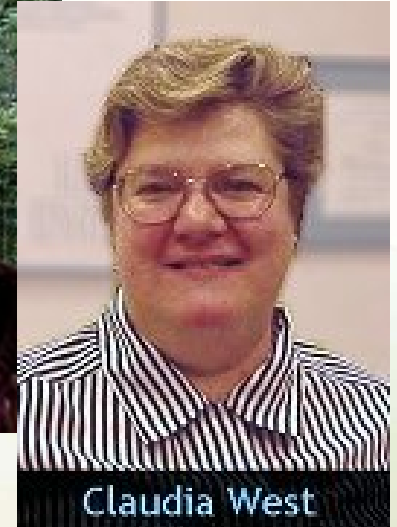
Brad Aouizerat



Judith Luce



Marilyn Dodd



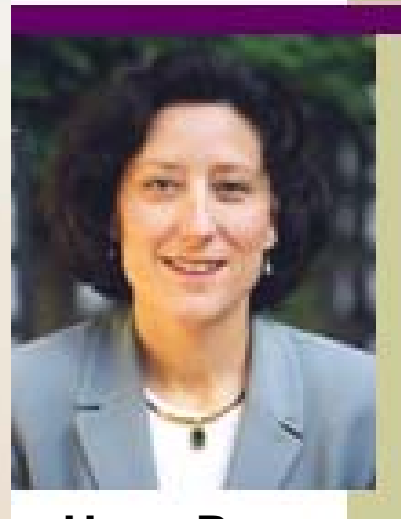
Claudia West



Kathy Lee



Laura Esserman



Hope Rugo



Steven Paul

Selection of Research Team

- **Overarching RULE!**
 - **Need to like the people you work with on your research team**
- **Meet with potential team members**
 - **Discuss the project**
 - **Ascertain interest**
 - **Speak with colleagues who work with potential team members**
 - **Discuss responsibilities**
 - **Prior to grant submission**
 - **During the period of funding**
 - **Discuss publications and presentations**
- **Regular research team meetings**

Selection of Research Staff

- **Research staff are critical to your success**
 - **Interface with study sites and participants**
- **Project director position is critical**
- **Research nurses need to be clinical experts**
 - **Provide education and training in research**
 - **Hire nurses with different talents and skills**

Research Staff – PRO-SELF© PAIN STUDY

Research Nurses

Gary Adams
Janet Allen
Marianne Burrows
Natalyia Chernyukin
David Denny
Janet Edrington
Eduardo Fracisco
Kim Hansen
Julia Harper
Christopher Hawkins
Molly Johnson
Ellie Kasch
Melanie Kaufman
Marly Lovely
Shirley Manly-Lampkin

Amy Mascio
Laura McIntosh
Joan Murray
Laura Perry
Elena Pierini
Dianne Rank
Rebecca Rathberger
Dee Santella
Teresa Seery
Teresa Simi
Karen Staser
Patricia Sweeney
Emma Villa
Evalyn Wais
Connie Yabes-
Sabolboro

Research Assistants

Ai-Shan Shih
Aeran Cho

Administrative Staff

Sue Dibble
Fusaye Kato
LaDonna BlueEye

Management of a Research Project

- **Management of a research project equates with running a small business**
- **Research staff are your employees**
- **As PI – you make a tremendous investment in staff education and training**
- **A major responsibility of a PI is to maintain funding to keep your staff employed**
- **Timing of grant submissions is critical to a successful research career**

Study Sites and Study Participants

- **Study sites**
 - **Must have a sufficient number of sites**
 - **Selection and maintenance of study sites is extremely time consuming but critical**
 - **Advanced practice nurses often help with entry into a study site**
 - **Provide sites with compensation and disseminate findings at the sites**
- **Study participants**
 - **Evaluate respondent burden**
 - **Do clinically relevant research**

Commandment # 7

Thou shalt honor the comments of reviewers

- **The receipt of reviewers' comments on grant applications and journal articles is one of the most challenging aspects of any research career**
- **Need to take the time to “listen” to the feedback**
 - **Determine which feedback is valid and requires action**
 - **Determine which feedback needs a rebuttal**

Two Examples of Reviewer's Comments

- **PRO-SELF© Pain Control Program**
 - R01 – funded by the National Cancer Institute
 - Study not funded the first time
 - Comment on “intervention fidelity”
 - Lead to the use of mixed methods approach
- **PRO-SELF© Plus Pain Control Program**
 - R01 – Funded by the National Cancer Institute
 - Required three submissions
 - Comment on the need to provide better justification for the “dose of the intervention

The PRO-SELF© Pain Control Program

- **Based on the work of Dodd and colleagues**
 - Theory was tested in a number of RCTs with oncology patients
- **Used the PRO-SELF© framework to develop a psychoeducational intervention to improve pain management that was guided by the following theories:**
 - **Self-care (Dorothy Orem)**
 - **Adult-learning**
 - Provision of education, skills training, and nursing support
- **Added the concepts of “academic detailing” and nurse coaching**
 - Cancer patients with pain from bone metastasis

Purpose of PRO-SELF© Pain #1 Study

The purpose of the RCT was to test the effectiveness of the PRO-SELF© Pain Control Program, compared to standard care, in increasing knowledge, decreasing pain intensity, and improving analgesic intake in a sample of oncology outpatients with pain from bone metastasis.



PROSELF

PAIN CONTROL

PILL BOX

Reviewer's Comment of Fidelity

- **Application was not funded the first time**
- **Comment on how we would monitor the fidelity of our intervention**
 - **Audiotape the nurse-patient interactions**
 - **Project director would assess fidelity**
- **Realization that the tapes were a rich source of qualitative data about patient/FC experiences with cancer pain management and the coaching processes used by nurses to help patients manage pain**

Benefits of the Reviewer's Comment on Fidelity

- **Applied for an administrative supplement to conduct qualitative analyses of the data**
 - **Team led by Dr. Karen Schumacher**
- **Innovative approach of nesting a qualitative study within a RCT**
 - **Analysis of real time data about patient/FC experiences with pain management**
 - **Did not confound the intervention with qualitative interviews**
- **Provided data that was used to design the next intervention study**

Pro-SELF Plus – Grant submission #1

- **RCT to test two different doses of the psychoeducational intervention**
 - **Duration = 10 weeks**
 - **Low dose = 2X previous dose**
 - **High dose = 3X previous dose**
 - **Test sustainability of the intervention**
- **All three reviewers (i.e., a recurring theme) indicated that we had NOT justified the need for a higher dose intervention**
- **Back to the literature!!!!!!**
 - **Learned about responder analysis in studies of psychotherapy**

Pro-SELF Plus – Responder Analysis

- **Conducted with patients in the intervention group**
 - **Established the criteria for a “response” based on the literature**
 - **Responder = 30% reduction in average and worst pain**
 - **Partial responder = 1% to 29% reduction in average and worst pain**
 - **Non-responder – 0% or an increase in average and worst pain**
- **Analysis revealed**
 - **Responders = 50%**
 - **Partial responders = 25%**
 - **Non-responders = 25%**

Pro-SELF Plus – Responder Analysis

- **Significant differences were found among the three responder groups in some of our secondary outcome measures**
 - **Responders reported significantly less pain interference with function**
 - **Responders reported significant improvements in physical function and QOL**
- **“First” responder analysis of a psychoeducational intervention in pain management**
- **Satisfied the reviewers’ comments on the second submission**

Commandment # 8

*Thou shalt PUBLISH, PUBLISH,
PUBLISH!!!!!!!*

- This commandment is the greatest
- 100 most influential people of the previous millennium
 - Johannes Guttenberg (1398-1468)
 - Inventor of the printing press
 - No longer “word of mouth” passage of information
 - Made mass communication possible

Commandment # 8

*Thou shalt PUBLISH, PUBLISH,
PUBLISH!!!!!!*

- Research presentations are relatively meaningless
- Until data have undergone peer review and been published for the scientific community to evaluate – a scientist's job is not complete
- Need to instill this ethic in faculty members and students
- Data must be published or we have done a great disservice to our study participants

On the Responsibility and Obligation to Publish

[or Words to Live By]

“The crunch comes when the work has to be written up properly and presented for peer review. Most researchers find writing difficult, tedious, and frustrating. There is, however, no point in doing research unless it is communicated – it is otherwise a waste of resources and time and becomes an entirely selfish, parasitic pursuit, playing games at somebody else’s expense.”

Commandment # 9

Thou shalt have a vision for the future

- Science is about the search for truth
- To build a successful scientific career, one must have a 5 to 10 year plan
- Maturation of a research career – capacity to handle multiple studies
- Establish a timeline
 - Studies should overlap
 - Studies should not start and stop at the same time

Commandment # 9

Thou shalt have a vision for the future

- As part of every study collect some data that will lead to another study
 - Example – neuropathic pain study
- Monitor future trends and discoveries
- Current work
 - Symptom clusters
 - Genetics of symptoms
 - NINR Summer Genetics Institute
- Develop international collaborations as you mature in your scientific career

Genetics and Pain – The Future

Colleagues at College of Nursing,
Oslo University College



Marilyn Dodd



Research Center for
Symptom Management



Brad Auizerat



Claudia West



Kathy Lee

Commandment # 10

Thou shalt have fun!

- Scientists lead privileged lives
- We engage in the process of scientific discovery
- We work to unravel some of the great mysteries in health and illness
- We travel to exciting parts of the world

