Conducting and Transferring Science to the Consumer

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Student Learning Objectives

1. Importance of the audience in identifying Extension issues.
2. Good translation begins with good science.
4. Go back to #1 and Repeat
Student Learning Objective #1

1. Importance of the Audience in Identifying Extension issues.

Understanding your target audience allows you to achieve the intent of the Smith Lever Act

• develop practical applications of research knowledge

▪ provide practical instruction and demonstrations
Transferring Science to the Consumer.

1. Who is your Consumer?

2. What do they need to know?

3. Does the information already exist?
   If yes \(\rightarrow\) where?
   If no \(\rightarrow\) what are the options?

4. What media will your consumer accept as reliable?
Student Learning Objective #2

**Good Translation Begins with Good Science**

- Good decisions require a strong knowledge foundation. Making decisions based on misinformation or outdated information can be costly or even deadly.

- The internet is a double-edged sword → large amounts of information on almost every topic is available but without quality control and often based strictly on opinion.
Nutrient Bioavailability

– The amount of an ingested nutrient that can be digested, absorbed, and assimilated.

– Amount consumed does **NOT** = amount absorbed into the body
Spinach does not equal Beef in terms of Iron Bioavailability

- Total Iron = 2.43mg Iron / 3 oz
- Total Iron = 2.21 mg Iron / 3 oz

Approx. Bioavailability

- 2% = 0.049 mg Iron
- 20% = 0.442 mg Iron
Assuring Nutrient Adequacy is too often based on **TOTAL** Nutrient Content rather than **BIOAVAILABILITY**

Result is Misleading and Potentially Harmful to Health
Student Learning Objectives #3

The Medium is the Massage [Message].

By Marshall McLuhan

Your choice of medium/media influences how your message is perceived.

Visual Examples:

TV, In Person 1 on 1, Community Talks, You-tube Videos, and Public Service Announcements (PSA),

Paper Print – newspaper, books, bookmarks, journals, Extension publications

Internet Print – websites, blogs, editorial comment

Audio Examples:

Telephone, radio, PSAs

Social Media Examples:

Facebook, Twitter, blogs, Digg, Leakernet, You-Tube, Daily Motion, Flickr
Choosing the Right Medium

1. How does your target audience get their information?
2. Does your target audience value all media the same?
3. Is the information translated into their language level?
4. Is your information at a shareable level?
   Being able to share adds value.
5. Can your data communication evolve as fast as the changing media?
Student Learning Objective #4

1. Importance of the audience in identifying Extension issues.
2. Good translation begins with good science.
4. Go back to #1 and Repeat
Few individuals (health professionals included) understand completely the concept of consuming ALL your essential nutrients for health.

The end result is that so many foods have been labeled as “good” or “bad” that many individuals ONLY consume foods labeled as “healthy.” The result is that eating ONLY “healthy” can cause nutrient deficiencies and in turn cause malnutrition with subsequent health consequences. How ironic that malnutrition can occur by consumer choice in a society with ample food to prevent this.
Transferring Science to the Consumer. Evidence Based Extension:

Got Nutrients Website

Has Sent out 1900 Daily Tips to over 1500 worldwide

Linked On Department Websites & Honolulu Marathon Website

Bookmarks geared to specific Audiences

In PSA / You-Tube

Concept is also available on a You-Tube video located here http://www.youtube.com/watch?v=6mFZ55jyMe0
Transferring Science to the Consumer.

Evidence Based Extension:

Today's Daily Tip:

February 27, 2014
Avoidance of milk products is associated with reduced bone density. Research indicates that most lactose intolerant people can consume up to 8 fluid ounces of milk without symptoms, especially when consumed with a meal. Don’t like milk? Most cheeses contain little or no lactose and also are good sources of calcium.

Consumer Related Article:
Even lactose intolerant can drink milk

Research Related Article:
Evidence Reports/Technology Assessments, No. 192
Transferring Science to the Consumer. Evidence Based Extension:

Sometimes the science disagrees with popular beliefs and social media. Disagreeing adds literary challenges. Present correct information without turning away your audience.

Health Options Articles

| 1997 | 1998 |
| 1999 | 2000 |
| 2001 | 2002 |
| 2003 | 2004 |
| 2005 | 2006 |
| 2007 | 2008 |
| 2009 | 2010 |
| 2011 | 2012 |
| 2013 |      |

2013 Articles

- High-profile fitness fads earn dubious distinctions
  January 8, 2013

- Beliefs sometimes trump science in how people eat
  January 22, 2013

- Whole milk and eggs do not threaten health, say studies
  February 12, 2013

- We must change our thinking to best address child obesity
  February 26, 2013
Transferring Science to the Consumer.

Evidence Based Extension:
Aquaculture

Abagold

Abagold is an aquaculture company that focuses on abalone.

Ancient Hawaiian Aquaculture

Aquaculture can play an integral role in integrated farming systems. Such systems combine fish production, animal husbandry, waste treatment and agriculture in one operation. The best-known modern examples of such operations are in Europe and Asia; these projects are sustained by large inputs of labor, feed and fertilizer supplements. Societies interested in integrated farming systems in order to increase food production and employment opportunities would do well to survey the techniques and designs of ancient Hawaiian aquaculture.

Aquaculture Hub- An Aquaculture Community Site

Founded by UHM's very own Dr. Benny Ron, AquacultureHub is a site for aquaculturists, teachers, students and everyday people interested in aquaculture. Sponsored by UHN and NOAA, the site includes open blog posts covering a wide variety of aquaculture related topics.

Aquaculture Network Information Center (AquaNIC)

AquaNIC is a collection of aquaculture electronic resources. This website provides information about aquaculture systems and species, links to publications and other organizations, and discussion groups.

Aquaculture Operations

The United States Environmental Protection Agency Aquaculture Operations website provides information about environmental requirements specifically relating to aquaculture production, management practices, education, research and publications.
Consumer Needs Stimulate Research

People trying to maintain or lose weight are reading food labels and reading nutrient content of recipes.

Approximate nutritional analysis, per serving: 380 calories, 22 g fat, 13 g saturated fat, 65 mg cholesterol, 450 mg sodium, 28 g carbohydrate, 1 g fiber, 4 g sugar, 19 g protein

— — —

Nutritional analysis by Joannie Dobbs, Ph.D., C.N.S.
Send requests to "By Request," Honolulu Star-Advertiser, 7 Waterfront Plaza, Suite 210, Honolulu 96813. Email bshimabukuro@staradvertiser.com.
Developing New Food Science Research

Differences in Recipe Yields \(\rightarrow\) Research Question \(\rightarrow\) What is causing the difference in recipe yields from decades ago?

72 Calories \(\text{versus}\) 120 Calories

Big Labeling Changes are Just Around the Corner

Translation is Needed NOW!!
10 Barriers that will Prevent You from Being Great at Extension


1. Plunging In - Gathering data and researching conclusions before thinking about the issues.

2. Frame Blindness - Setting out to solve the wrong problem.

3. Lack of Frame Control - Failing to define the problem in more ways than one or being unduly influenced by other's frames.

4. Overconfidence in Your Judgment - Failing to collect key factual information because you are too sure of your assumptions and opinions causes Recent Data Bias.

5. Shortsighted Shortcuts - Relying inappropriately on rules of thumb - trusting the most available data.
10 Barriers that will Prevent You from Being Great at Extension - continued

6. Shooting From the Hip – Thinking it is possible to keep all needed information in your head.

7. Group Failure - Assuming many smart people automatically make smart decisions.

8. Fooling Yourself about Feedback - Failing to interpret data from past outcomes.

9. Not Keeping on Track - Failing to keep systematic records to track decisions.

10. Failure to Audit Your Decision Process - Failure to keep track of your decision making process.

Of course we all know that we’re right about everything - until we find out we were wrong.
DaVinci’s Principles Will Help You Be Great at Extension

How to Think like Leonardo da Vinci – Seven Steps to Genius Every Day by Michael J Gelb

1. Be CURIOUS.
2. Test your knowledge through experience and be willing to learn from your mistakes.
3. Have continual refinement of your senses.
4. A willingness to embrace ambiguity, paradox, and uncertainty.
5. Develop a balance between science and art.
6. Cultivate grace, ambidexterity, fitness and poise
7. Recognize and appreciate the interconnectedness of all things and phenomena **Systems thinking**.
Formula for Extension Success
Develop a Successful Partnership

The Audience
+
Extension Problem Solver
[Who just happens to be Knowledgeable
Aware of Resources,
Able to Translate Science to a 6-year old or physicist,
With a Practical Perspective,
Understands Appropriate Media for Communication,
and Packaging of Information and …
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Understands Appropriate Media for Communication,
and Packaging of Information and
Can leap tall buildings with a single bound]
**Readings/Websites/Videos**

**The World is a Global Village (CBC TV)** by Marshall McLuhan, author of *The Medium is the Massage* [Message].  
http://www.youtube.com/watch?v=HeDnPP6ntic


Got Nutrients  
http://gotnutrients.net/

Got Nutrients You Tube  
http://www.youtube.com/watch?v=6mFZ55jyMe0

Health Options  
http://www.nutritionatc.hawaii.edu/HO/health.htm

Food Systems  
http://foodinfo.ctahr.hawaii.edu/FoodSystems/

How to Think like Leonardo da Vinci - Seven Steps to Genius Every Day by Michael J Gelb. Dell Books 2000