



SCIENCE ONLINE   SCIENCE MAGAZINE   SCIENCE NOW   **NEXT WAVE HOME**   SCIENCE'S STKE   SCIENCE CAREERS   E-MARKETPLACE

**DAVID JENSEN** | [Change Password](#) | [Change User Info](#) | [Subscription HELP](#) | **Sign Out**

**Science**

**next wave**

ABOUT US

SUBSCRIPTIONS

FEEDBACK

SEARCH

DIRECTORIES

▶ SITEMAP

▶ E-MAIL UPDATES

Job Market  
News

Career  
Transitions

Job Hunting

Diversity &  
Work-Life

Postdoc &  
Faculty Issues

For Grad  
Students

Science Policy

FORUMS

GRANTSNET

GRANTSNET

JOBSNET

SALARY SURVEY

FORUMS

TOOLING UP CAREER ADVICE



**Dave  
Jensen**



DAVE IS THE MANAGING  
DIRECTOR OF  
[SEARCH MASTERS  
INTERNATIONAL](#) IN  
SEDONA, ARIZONA

## Digesting New Ideas

13 MARCH 1998

*"Man can live without air for a few minutes, without water for about 2 weeks, without food for about 2 months, and without a new idea for years on end."* -- Anonymous

**L**ots of new ideas are presented in the Next Wave. The problem with new ideas, however, is that there has to be a place to put them. One frustration I've developed over the years is that some scientists have little room for fresh thoughts regarding their career development. While being open to new information that comes to them via the scientific process, many people put ideas about jobs and career issues into a separate part of their brain. They know what works and what doesn't, because their mentor told them how to go about this process.

Well, what if it doesn't work that way anymore? What if, heaven forbid, the mentor didn't know things had changed?

In this case, the "this is the way it's always been done" problem sets in. People who are open for radical paradigm shifts in their scientific thinking suddenly close that open door for new ideas of a more personal nature.

At a recent seminar I gave on the topic of

"Awakenings: The Real Science Job Market," I found this problem to be acute. I decided to break up that mental logjam with some creative thinking exercises, and it worked very well.

My audience consisted of 50% undergrad science students and 50% grad students and postdocs--at a large university with a big emphasis on biotechnology-related programs. It was a lot of fun, as usual. I noticed, however, that the undergrads were a lot more positive about their futures than were the postdocs and a percentage of the grad students. (This was likely because they were further removed from stories of a lousy job market and/or the agony of a search for employment.)

Although we discussed all the ups and downs of scientific careers, we didn't dwell on those. That's because it is my opinion that job markets are like roller coasters, and if you just wait a bit, you'll be back on the upswing somewhere shortly down the road. To the postdoc who's already been through 4 years of job searching, however, that philosophy doesn't hold a lot of water.

It was my plan to use a grim picture of the "current reality" as a springboard for some creative thinking exercises, which would then lead into some of the many alternative careers that exist for technically trained people. My plan was to have creative energy in the air, and ideas zinging through the room. Sure enough, I almost had to lock the doors to keep the energy in!

### Start With the Facts--Digest Them, Forget Them, and Then Turn Them Around

Jack Foster, who wrote the excellent book on creative problem solving called [\*How to Get Ideas\*](#), describes the problem-solving process he used in creating several very successful companies over the years:

1. Your mind gathers its raw materials, including specific knowledge about the problem and its relation to life and events.
2. The mind masticates those materials.
3. You must then drop the whole subject and put it as completely out of your mind as you can.
4. Out of nowhere an idea will appear.
5. You take your little newborn idea out into the real world and see what happens.

This process, used by Foster in the advertising business, is something I would advocate whenever you're in a tough spot and thinking about ways to have a breakthrough. It's not a scientific process, but it's close (with a little more intuition and positive thinking thrown in!). In this presentation about science careers, I started with these facts:

- There are not enough traditional science positions in academia to accommodate all of those who desire employment on the tenure track.
- The current job market for many disciplines, even in industry, where there is a relatively strong economy, is not in good shape.
- Scientists have many skills that are transferable to jobs that don't deal with bench research.
- There are many high-growth areas of employment that revolve around the combination of a science degree and one in computers, law, or business.

## There May Be Many Possible Solutions

Sometimes it is easier to think of many solutions than it is to think of just one. As you start to analyze your own personal situation, kick back and allow those ideas to flow. If you believe there is only one perfect career choice out there for you, then you will be greatly disappointed at how long it might take to identify it. In fact, many people give up. Brainstorming doesn't work when you are seeking to find that one

"right answer" to the problem at hand.

After reading Jack's book, I saw that throughout my education I had been answering questions in multiple-choice tests by finding that one right answer. True or False questions were the same way. This line of thinking tends to permeate our creative process as well, and when we really need to be flexible and examine the problem from a number of angles, we keep going back to that multiple-choice question and trying to figure out which answer is *right*. Well, in a difficult problem like that faced by many scientists who thought they were going to end up with a traditional academic career, there could be a *lot* of right answers.

That day, we spoke briefly about the various directions the biotechnology industry has taken and the wide variety of positions that require a science background and the critical thinking skills that go with it. Many of these new careers have been discussed in the Next Wave. Although we can't recap them all in this short column, I believe some of the self-analysis and creative brainstorming we used that day opened channels for new ideas.

## How Our Meeting Turned Out

No one can change their view of life and their career in a 45-minute workshop. I was pleased to see, however, that several of the most vocal of the postdocs in the audience had agreed that perhaps there were indeed other possibilities besides those they had been targeting. In other words, they agreed that there was a solution out there somewhere; they just had to find it.

Norbert Wiener, author of [\*The Human Use of Human Beings\*](#), believes that once we have reached this point, we are ready to find the answer:

"Once a scientist attacks a problem which he believes to have a solution, his entire attitude is

changed. He is already some 50% of the way toward that answer. The mere knowledge that a problem is soluble means that half the game is already won."

I hope the Next Wave can help move you to this point and beyond in your search for career satisfaction.

### References:

*[How to Get Ideas](#)*, Jack Foster, Berrett-Koehler Publishers, San Francisco, California, 1996.

Quoted from *How to Get Ideas*, Berrett-Koehler Publishers, San Francisco, California, 1996, p. 37.

---

#### RELATED ARTICLES

1. [Preventing Burnout: Learning About the](#)  
By David Jensen, 11 Dec 1998
2. [Self-Assessment Exercises: A GRE for Your Ego and Superego](#)  
By Peter Fiske, 27 Feb 1998
3. [Stanford Survey of Grad Students Finds Diversified Training Is Needed](#)  
By Sharon Hays, 21 Feb 1997

Copyright © 2000 by the American Association for the Advancement of Science.