

The Psychological Science Agenda



A PUBLICATION OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION SCIENCE DIRECTORATE
 VOLUME 21, NUMBER 6, JUNE 2007
<http://www.apa.org/science/psa/homepage.html>



Gordon Bower Receives 2005 National Medal of Science

by David Kerns

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Gordon Bower, renowned cognitive psychologist at Stanford University, has been honored as a recipient of the 2005 National Medal of Science for his exemplary research in human memory and reasoning. The list of the National Medal of Science Laureates for the year 2005 was released on Tuesday May, 29, 2007 by the Office of Science and Technology Policy within the Executive Office of the President. Bower was one of eight recipients of this prestigious award for 2005. It is one of our nation's highest scientific honors.

The National Medal of Science is awarded for "pioneering scientific research in a range of fields, including physical, biological, mathematical, social, behavioral, and engineering sciences that enhances our understanding of the world and leads to innovations and technologies that give the United States its global economic edge." The President's Committee (responsible for selecting recipients) recognized Bower "for his unparalleled contributions to cognitive and mathematical psychology, for his lucid analyses of remembering and reasoning and for his important service to psychology and to American science." At Stanford, Bower studied human memory, mnemonic devices, retrieval strategies, recording strategies, and



Gordon Bower

category learning. His other research interests included cognitive processes, emotion, imagery, language and reading comprehension as they relate to memory.

While still working on his doctoral degree at Yale University, Bower was offered a professorship at Stanford University after attending a workshop there in the summer of 1957. After earning his PhD with distinction from Yale, he began his career at Stanford, where he remained until 2005. While at Stanford, Bower served as the chair of the Psychology Department from 1978 to 1982 and as the associate dean of the School of Humanities and Sciences from 1983 to 1986.

Gordon Bower is regarded as one of the foremost experimental psychologists and learning theorists in the United

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EXECUTIVE DIRECTOR'S COLUMN

STEVEN BRECKLER, Executive Director for Science

Big Dog...Little Dog

One of my favorite early reader books is *Big Dog...Little Dog* by P. D. Eastman. It is the simple story of two dogs, Fred and Ted. Fred is the big, green dog. Ted is the little, red dog. They are good friends. Each recognizes and respects the other's needs, abilities, and interests. They get along, and they solve problems together.



immediate interests and needs, but can do little more.

The big societies tend to be managed at a larger scale – a large membership, a big budget, a large professional staff, and deep resources. They can sustain very sizeable scholarly publication programs, maintain a lobbying and advocacy presence in Washington and elsewhere, develop and support standards and guidelines, and convene smaller groups to meet almost anywhere and anytime.

The small societies have very special appeal. Those of us who work in narrowly defined slices of sub-disciplines derive some of our greatest professional satisfaction from the handful of small societies to which we belong. We share a lot in common with the other members – we look alike, we talk alike, we think alike. We are birds of a feather flocking together.

The large societies seem to have less appeal. The diversity that almost always characterizes the membership creates differences in opinions, thoughts, and values. This often leads to conflict and distrust, and a less comfortable environment. The resources and influence of large societies often invites resentment and contempt, even among their own members.

Add to this mix the competition for members. Almost every scholarly society requires payment of dues or fees, and each wants its members to attend its own meetings. The average scholar's budget can sustain only so many memberships and allow for only so many expensive conventions. When push comes to shove, the special appeal of small societies often wins out.

APA is one of the big dogs. A large professional and scientific society, serving virtually all dimensions of the large discipline of psychology. No other psychology society has the resources or staffing offered by APA. No other psychology society has the depth or the breadth of APA's publishing program, lobbying presence, advocacy reach, or convening ability. No other psychology society counts among its membership the same breadth and diversity of the discipline of psychology. And no other psychology society must accommodate the diversity of opinion and dissenting viewpoints that characterize the membership of APA.

Big dogs have their problems. Little dogs do too. No size is perfect, but each offers unique advantages and special qualities. The great discipline of psychology is enriched by its own diversity, including the healthy functioning of its big dogs and its small dogs.

I cherish my membership in the small specialty societies to which I belong and with which I most strongly identify. Yet, I devote most of my professional energy to working with the largest professional society. I do it because I want to see psychology maintain and grow its presence on the national and international stages of science. This is the work of big dogs. ■

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Scholarly societies are a lot like Fred and Ted. They come in all varieties, filling different niches and satisfying different needs. And yes, some are big and some are small.

The small, specialized societies have many unique qualities. They offer meetings and journals that cater to well-defined and circumscribed scholarly pursuits. The annual or biannual conventions offer a place where colleagues and students with very similar interests gather, exchange information, talk about the latest trends, and sustain very good friendships. Everyone speaks the same scholarly language. In the general scheme of things, there is little diversity in opinion or outlook.

The large, omnibus societies have different qualities. They too offer meetings and journals, but ones that tend to appeal to a large number of diverse scholarly pursuits. Their conventions tend to be large and busy, not small and intimate. Those who attend may share only very remote connections, with many different scholarly languages being spoken. In the general scheme of things, there is substantial diversity in opinion and outlook.

The small societies are often managed at a small scale – a small membership, a small budget, a small (usually volunteer) staff, and limited resources. They are able to cater well to members'

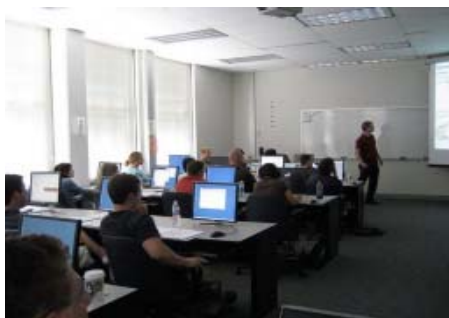
Advanced Training Institutes Start Summers Off Right – More To Come

by Nicolle Singer

The first three of the five ATIs taking place this summer are now complete! Over 75 psychologists and advanced graduate students took part in these exciting training institutes. The Science Directorate is looking forward to the final two ATIs that it will sponsor in 2007, which are planned for July and August.

After much anticipation, participants met for their week of intense study ready to hit the ground running. Background readings were provided for each ATI, as were short bios for each participant. Having the chance to meet peers prior to the program facilitates networking and builds a sense of expectation for the week's opportunities.

The University of Virginia was once again the site of the popular ATI on "Structural Equation Modeling in Longitudinal Research." All participants were currently using SEM in their research or had firm plans to begin using these methods, so interest was intense and questions flowed freely. The workshop included classroom lecture, demonstrations, and lab time with plenty of instructors ready to answer individual questions. Jack McArdle began the seminar by providing an in-depth overview of the



Instructor Michael Riley, of the University of Cincinnati, speaks to the group at the ATI on Non-Linear Methods.

principles and practice of SEM, before moving on to increasingly advanced topics. Participants were encouraged to bring along their own data and research problems to the ATI, and have reported that the hands-on nature of this program is one of its huge benefits. Psychologists must often rely upon written text in order to learn new statistics, but having a room full of instructors at hand greatly expedites the learning process.

The next two events of the summer took place in early June. Supported by a grant from the National Institutes of Health, the ATI "Childcare (It's More than You Think): A practical and hands-on approach to learning about large-scale databases" was a hit. This workshop focused on learning to use the large, rich set of databases developed by the National Institute of Child Health and Human Development (NICHD) Study of Early Child Care and Youth Development (SECCYD). The SECCYD takes a broad view of child development among a large national sample. Data collection began in 1991 with the enrollment of 1,364 children at 10 sites and continues today, tracking many of the children from birth through age 15. Hosted by Research Triangle Institute and the University of North Carolina, the APA ATI provides participants with a thorough introduction and orientation to the datasets. As a prerequisite to participation in this program, each researcher must propose a research project for which they plan to use the data. This popular program will hold its final session in the summer of 2008. Applications will be available on the ATI website in December 2007.

The third ATI to take place so far this summer was on "Non-Linear Methods for Psychological Science." The University of Cincinnati's Psychology



Participants in the ATI on Non-Linear Methods try their hand at running a computer model.

Department hosted this ATI, which provided a thorough introduction to some increasingly popular dynamical methods. At this ATI, participants learned about the design and execution of experiments using nonlinear methods; a data analysis technique of increasing importance within psychology and related disciplines. Instructors introduced various nonlinear methods as good tools to add to any healthy statistical repertoire. Although linear methods have historically answered most statistical questions in psychology, this ATI discussed ways to look for non-linear structure and reasons why a psychologist may want to do so. In addition to lectures and discussion, there was ample hands-on computer time in which participants practiced using the turnkey software that was distributed at the program. ■

To learn about the other ATIs planned for this summer, be sure to check <http://www.apa.org/science/ati.html> or email us at ati@apa.org!

From the Science Student Council

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The Science Student Council is a group of nine graduate students who spend a couple of weekends a year with the Science staff, advising us on programs and activities that would benefit graduate students in psychological science. This month, and every month for the next year or so, the students will present useful information that other graduate students need to know! Visit the Science Student Council page (www.apa.org/science/apasscweb.html) to learn more about the activities of the SSC.

Front row – Marcy Boynton, Suzi Dean, Kelly Dunn, Janet Tomiyama (chair). Second row – Paul Poteat, Jennifer Brielmaier, Camilla Hileman, Felix Thoemmes, and Marc Berman.

Getting Involved in the Peer Review Process

by A. Janet Tomiyama

In the publish-or-perish world of the psychological scientist, sometimes we are more preoccupied with ranting and raving against anonymous peer reviewers than with actually *becoming* those reviewers ourselves. However, becoming involved in the peer review process, particularly as graduate students, can be an incredibly informative and career-building experience. First and foremost, it's a CV line (under "Service," put "Ad Hoc Reviewer – *Name of Journal*"). Second, you get to read and learn from others' cutting edge work. Third, by taking an objective and critical perspective from reviewing others work, you can hone your own scientific skills.

But first – what is peer review? Peer review refers to the examination of a manuscript submitted to a journal by anonymous scientific peers. After a thorough review, reviewers suggest changes to the manuscript and make a recommendation (the rare "accept as is," the common "revise & resubmit," and the dreaded "reject").

Getting involved in this process is not as daunting as it may seem. The most common way is by assisting faculty in

manuscript reviews that they have been requested to complete. In this case, the faculty member should inform the editor that you will be assisting on the review; this not only ensures that everyone involved in the review gets appropriate credit, but it also makes certain that you have authorized access to an otherwise privileged document. Seeing that you have conducted a fair and thorough review, the editor may file your name as a potential reviewer for future manuscripts. Second, if you have submitted a manuscript, you may be requested to be a reviewer, as editors also draw upon the pool of authors who have previously submitted their own work to that journal. Third, some journals like the *Journal of Social Issues* have student positions on their editorial boards. These positions are usually appointed by the journal editor and are given to students with some publishing experience.

A final way is to actually contact an editor to offer up your peer review services. This approach is usually most successful when you have some sort of publication record, but is still an option if you don't. Editors are always looking to expand their base of

reviewers, and may be just as happy to send a manuscript to a faculty member's advisee to get the review done.

If you are then given a manuscript to review – what now? There are some great resources on how to write a review (e.g., Kazdin 1995; 1998; Sternberg, 1997), and your advisor will probably be another good resource. Overall, a review should be specific as to how a manuscript should be changed, should outline both the strengths and weaknesses of a paper, and should focus on answering three main questions (Kazdin, 1998):

1. Does this paper make an important substantive contribution to this area of research?
2. Does the methodology (design and execution) permit one to draw the conclusions the author wishes to make?
3. Is the paper well organized and complete in explaining what was done and why and how it was done?

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APA Fellow Delivers Defense Research Testimony on Capitol Hill

by Heather O'Beirne Kelly

On May 16th, APA Fellow William J. Strickland, delivered APA's oral testimony before the Senate Appropriations Subcommittee on Defense. APA's Science Government Relations Office succeeded in procuring a coveted oral testimony slot again this year, and Strickland and other witnesses each were given four minutes to present funding recommendations related to the Department of Defense (DoD) for Fiscal Year 2008 (earlier in the month APA had submitted longer, written testimony for the record).

As a former Director of the Air Force Human Resources Lab and current Vice President of the Human Resources Research Organization, Strickland was uniquely positioned to present APA's funding requests to the Subcommittee,

chaired by Sen. Daniel K. Inouye (D-HI). Testimony focused on the need to restore proposed Administration cuts to DoD research programs, protect an important counterintelligence behavioral research program potentially slated for extinction, and increase support for the Center for Deployment Psychology training program (developed out of an APA Education Directorate collaboration with DoD).

Following Strickland's testimony, Chairman Inouye emphasized the Subcommittee's strong historical support of psychology, particularly within DoD. APA's Science Government Relations staff will continue to lobby appropriators on research and training issues as the Senate and House funding bills move through Congress. ■



APA Fellow Bill Strickland testifies on behalf of APA before the U.S. Senate Appropriations Subcommittee on Defense

Read APA's written and oral defense appropriations testimony for more information.

Read the written testimony at: www.apa.org/ppo/issues/0607FY08SenateDefenseTestimony.pdf
Read the oral testimony at: www.apa.org/ppo/issues/0607FY08OralSenateDefenseTestimony.pdf

Eureka! A Guide to Satisfying Your Inner Scientist in San Francisco

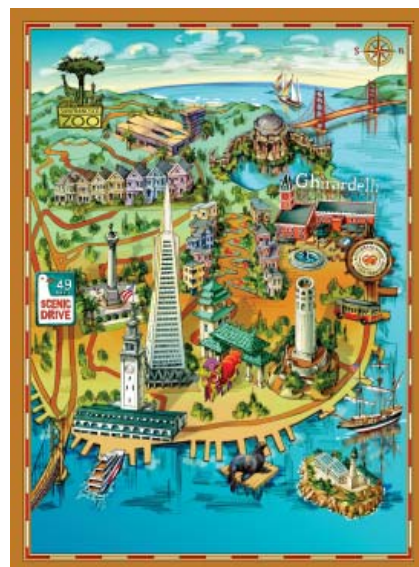
by Amber McCrady

Don't forget to register for the APA Convention in the beautiful city by the bay, August 17-20. The deadline for preconvention registration rates (July 2) is approaching quickly, so don't delay! Go to www.apa.org/convention for complete Convention details!

The Science Directorate's *Scientist's Guide to the APA Convention* is now available on the Science Directorate website. The guide highlights a wide variety of science-related sessions ranging from a graduate research speed

lightening round (*Psychological Science Graduate Superstars Datablitz*) to discussions on the controversial current topic of ethics and interrogations to Phillip Zimbardo's invited address on "The Lucifer Effect in Action."

Visit www.apa.org/science/conv07guide.html to view the sessions that you should be sure not to miss. Paper copies of the guide will also be available at the Directorate's booth in the Moscone Convention Center. Stop by to see us! ■



APA Trainings Coming Up – Choose GIS or Web-Based Research

by Nicolle Singer

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Applications are still being accepted for two of this summer's APA Advanced Training Institutes (ATIs). These intensive training programs expose advanced graduate students, new and established faculty, post-docs, and other researchers to state of the art psychological research methods and emerging technologies. For more information, visit http://www.apa.org/science/ati_promo.html

We encourage you to consider these programs for yourself and to forward this announcement widely to colleagues and students who may be interested.

This year we are hosting a new ATI: a pre-Convention program on **Geographic Information Systems (GIS) for Psychology**. This new ATI will introduce Geographic Information Systems for Psychological Research, and will be held **Thursday August 16, 2007 at the San Francisco Marriott**, 55 Fourth Street, and is within walking distance of the Moscone Convention Center as well as many restaurants and shops. This ATI will focus on the uses (and potential uses) of GIS in psychological research, with plenty of examples from active research programs. A panel of psychologists who use GIS in their research will speak

about the strengths of this methodology and its contribution to their investigations. A brief overview of the technology will also be provided, including an overview of different types of GIS software. If possible, be sure to bring a laptop so instructors can better illustrate software and provide you with some "freeware." The day will conclude with a final panel discussion to answer questions. When possible, demonstrations of GIS technology will be matched to the research interests of attendees as described on the registration forms. Dr. Reginald Golledge, a leading behavioral geographer, will direct this ATI. *Applications are being accepted for this ATI until seats are filled – so don't delay, register today!*

The registration fee for this terrific program is just \$50; similar one-day seminars are \$300 or more, so do take advantage of this opportunity to learn about a new tool at a very low cost.

Another ATI will focus on **Performing Web-Based Research**, and will be held **July 9-13, 2007**, at the University of Northern Iowa, Cedar Falls. This program will cover the how, why, and why not of designing and implementing web-based research. Examples of

interactive experiments that are conducted on the web are discussed, and instructors provide background on the history of internet-based research, as well as the ethics of collecting data on the web. Other topics include longitudinal web methods, large shared databases, web panels, and the recruitment and retention of online participants. Website creation is introduced using basic html and the Authorware software package, as needed for each individual's project. Attendees should come prepared with a web project (or an idea for a web-based experiment) that they would like to work on during the week. *Applications will be accepted until seats are filled.*

Applications are available at http://www.apa.org/science/ati_promo.html and must be submitted electronically through the program's website. For more information, contact APA's Science Directorate at ati@apa.org or (202) 336-6000. ■

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A final note - the tone of the review should be polite and constructive. Everyone has heard horror stories of mean and nasty reviews that personally attack the author. Interestingly, younger reviewers can sometimes be the most strident in their reviews. A prominent professor at UCLA once said, "You submit your manuscript and then just pray it doesn't get sent to a junior faculty member – young faculty are merciless!" Remember, we as graduate students are the next

generation of peer reviewers, and can determine the future culture of peer review – let's keep it nice.

For more info: The SSC has created a publication called "A graduate student's guide to involvement in the peer review process," which is available at <http://www.apa.org/Science/PeerReviewFinal.pdf>. This guide has a sample editorial decision letter that will give you some idea of what a review looks like.

Kazdin, A. E. (1995). Preparing and evaluating research reports.

Psychological Assessment, 7, 228-237.

Kazdin, A. E. (1998). *Methodological issues and strategies in clinical research*, Second edition. Washington, DC, USA: American Psychological Association.

Sternberg, R. J. (Ed.) (1997). *Reviewing scientific works in psychology*. Washington, DC, USA: American Psychological Association. ■

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States. Throughout the years, his work and achievements have been recognized by a number of organizations. Bower served as President of the Western Psychological Association, the Association for Psychological Science, and the Society of Experimental Psychologists. He also served as the American Psychological Association's Chief Scientific Advisor, with his term spanning the tenure of four Science Executive Directors, including those of William Howell, Richard McCarty, Kurt Salzinger, and the first year of current Science Director Steve Breckler. Stanford University honored Bower as its Albert Ray Lang Professor of Psychology in 1975, and in 1979 the American Psychological Association awarded him the Distinguished Scientific Contribution Award.

From 1992 to 1993 Bower served as the Chief Scientific Advisor to the Director of the National Institute of Mental Health (NIMH), Fred Goodwin. His work in this position led to his appointment as the leader of a 52-person task force at NIMH that produced a thorough review of the state of mental-health knowledge in 1995, entitled *Basic Behavioral Science Research for Mental Health: A National Investment*. This report guided the National Advisory Council on Mental Health and was submitted as a requested report to the Congressional committee overseeing the NIMH budget. Bower has received several other national honors, including election to the National Academy of Sciences, the American Academy of Arts and Sciences, and the Society of Experimental Psychologists.

Upon receiving the award, Dr. Bower thanked friends and colleagues and remarked that this great honor was not simply the achievement of one, but of many. "Because it is so rarely given in the social-behavioral sciences, the award helps promote recognition of our field. A few psychologists have gone before me, and hopefully many more will come after. I am fully aware that it is the joint work with my ex-students and collaborators that is recognized by this prize and you should consider it as shared by all of us," said Bower. ■

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Psychological Science Agenda is distributed free to 30,000 psychologists, members of Congress and their staffs, key officials in federal agencies that fund behavioral research and use its findings, institutional libraries, and science writers in the national media.

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