

A BEGINNER'S GUIDE TO THE WORLD OF RESEARCH GRANTS FOR SOCIOLOGISTS¹

GETTING STARTED

Getting started to prepare a grant proposal is a lot like getting started to write a research paper. But, the scale of the enterprise is a little bit bigger because funders will usually expect you to produce more than *one* published article from a project that they support. It all begins with **A GOOD IDEA**. Where do “good ideas” come from? Basically, they come from previous work that has been done in a substantive area, and they identify unanswered questions that you will be able to answer when the funder gives you lots of money (or at least that’s the story). So, you must be familiar with the literature in the area within which your project is situated; and you have to be creative enough to come up with a set of research questions (sometimes stated as hypotheses) that seem: (1) relevant to the substantive area, (2) scientifically important, and (3) answerable with the methodological approach you propose to use.

In general, you will probably want to avoid grand, sweeping questions like, “Why are societies stratified?” or “Why is the homicide rate in the U.S. so high?” But, you’ll also generally want to avoid questions that are too specific and focused, like, “Why are 35-year old white males living in central cities in the Northeast less likely to be married than 35-year old white males living in suburbs in the Northeast?” Rather, you’ll probably want to pose “middle range” research questions that give you lots of room to maneuver once you get your award. Something like the following might be appropriate, “How do the social, economic, and cultural contexts of inner-city and suburban neighborhoods affect the marriage and family-related behaviors of young males?” It is always a good idea to seek the advice of experienced colleagues as you begin the preliminary work to develop a grant proposal.

CHOOSING A FUNDING SOURCE

There are many potential sources of funding to support research in the social sciences. In fact, when you start your search for an appropriate funder it can be pretty overwhelming as you try to sort out the different agencies, foundations, and organizations that might want to give you money. A good starting point is to consult with the University’s Office of Research, Grant and Contract Services:

<http://www.washington.edu/research/guide/fund.html>

They will have an inventory of potential funding sources, and they can help you search that inventory based on the kind of research you’re proposing to do. There are sources of funding for dissertation research, for post-doctoral support, for research, and for career development efforts. Sociologists have been quite successful at tapping into a wide variety of funding sources. However, I think that it’s safe to say that most grants to sociologists come from a limited number of foundations (e.g., Mellon, Ford, Hewlett, Spencer, etc.) or federal agencies (e.g., the National Science Foundation, the National Institutes of Health, or the National Institute of Justice). The way you approach foundations and federal agencies is quite a bit different, so you’ll want to follow closely the procedural guidelines that are usually available on the Web. Here are my general impressions:

¹ This is a working draft prepared by Stew Tolnay (revised May 25, 2008). Comments, corrections, and suggestions are welcomed. The information in this document is not guaranteed to be accurate, but it is the truth to the best of my knowledge.

Foundations: The grant-processing practices at foundations are usually less formal than they are at federal agencies. Often they will ask you to submit an initial letter of inquiry, or a short “pre-proposal,” describing your project. Then, a foundation officer, sometimes in consultation with an advisory board, will read what you have submitted and evaluate it in light of the foundation’s mission, priorities, and plans. If they think it fits, then they will invite you to prepare a full proposal that will go through a more formal review process, though the exact procedure varies from foundation to foundation. Before you prepare your letter of inquiry or pre-proposal it is a good idea to discuss your plans with the appropriate foundation program officer. If you are invited to submit a full proposal it is especially important to seek the advice of the program officer.

Federal Agencies: Federal agencies like the National Science Foundation (NSF) and the National Institutes of Health (NIH) have a more structured process for proposal submission. Both agencies have regular review cycles, with deadlines for proposal submission. NSF has two submission deadlines, August 15th and January 15th. I think that NSF’s website says that proposals can be submitted at any time, but I suspect that they’ll just hold on to your proposal until one of the two submission dates before they process it. Most sociologists get funding from the Sociology Program at NSF, but it is also possible for sociologists to get support from other NSF programs such as Law and Social Science or Geography. NSF has mechanisms for supporting dissertation research, either as a fellowship or as an award to fund specific dissertation-related activities or purchases. You can visit the NSF website for more specific information about funding opportunities within different programs, or for instructions for preparing and submitting applications:

<http://www.nsf.gov/>

NIH has three submission deadlines, for first-time submissions they are: October 1st, February 1st, and June 1st. A number of institutes within NIH support the research of sociologists, including: The National Institute of Mental Health (NIMH), the National Institute of Drug Abuse (NIDA), the National Institute of Alcohol and Alcohol Abuse (NIAAA), the National Institute on Aging (NIA), and the National Institute of Child Health and Human Development (NICHD).² In addition to the regularly scheduled competitions, most institutes will also advertise Requests for Applications (RFAs) that are invitations for researchers engaged in specific kinds of research to submit proposals. Sometimes these announcements are accompanied by something called “set asides.” That means that the institute has allocated a special pot of money for the proposals submitted in response to the RFA. At other times RFAs are used primarily to advertise areas of research that the institute wants to encourage, and there will be no money specially allocated for proposals submitted in response to the RFA. You can visit the NIH website for more information about different agencies within NIH and about application procedures,

<http://www.nih.gov/>

In most cases, the program staff at NSF and NIH will be happy to consult with researchers who are planning to submit a grant proposal. In some cases they actually encourage or require it.

As you consider a potential funding source you will want to consult with colleagues who have had experience with specific agencies or foundations. Probably the most important

² The National Institute of Justice (NIJ), a branch of the U.S. Department of Justice, also supports research on topics dealing with deviance, delinquency, and criminal justice. For more information about NIJ visit their website at: <http://www.ojp.usdoj.gov/nij/>.

factor to consider is, “Does the agency/foundation have a history of supporting research like mine?” But other factors are also important, such as the projected cost of your project. For example, my impression is that the NSF Sociology Program is unlikely to make awards for individual projects that exceed \$200,000. So, if you are planning a \$2 million dollar project that involves large scale primary data collection, or other very expensive procedures, you will probably want to explore your options at NIH, rather than NSF.³

Another factor which should not necessarily influence your choice of a funding source, but which you will have to deal with at some point is the issue of “indirect costs,” sometimes also referred to as “overhead,” or “facilities and administration.” Indirect costs are dollars that go to your University or Research Foundation to pay for the general infrastructure (e.g., lighting, heating, personnel) that supports the administration and execution of your project. For example, for most on-campus research projects, the University of Washington requires that you include in your grant budget 56 cents in indirect costs for every \$1 devoted to your research project. That means that if you estimate that it will cost \$100,000 to pay for the activities of your project, you will actually request \$156,000 from the funding source. Foundations will often refuse to pay for indirect costs, or will pay at a reduced rate. Federal agencies will almost always pay the full rate for indirect costs with some exceptions, which often makes universities a little more enthusiastic about grants from federal agencies. But, grants from prestigious foundations are always welcomed. The University periodically negotiates with the federal government to set its indirect cost rate.

Unlike scholarly journals, federal agencies (and I think most foundations) do not care if you submit your proposal to more than one place at the same time. So, for example, it is possible to have the same basic proposal under consideration at NSF and NIH at the same time. If both agencies decide to fund your research (a wonderful position to be in!), you will work with the two program officers to come up with an arrangement for joint funding that does not give you money from two sources to pay for the same things.⁴

PREPARING THE PROPOSAL

Once you know where you will submit your proposal it is extremely important that you follow the guidelines for the agency or foundation. NSF and NIH have documents that give very explicit directions for what kind of information must be included in the proposal, how many pages you can use to convey the required information, and the organization of the proposal. These guidelines are available on the Web or through the University’s Office of Research. Foundations usually operate a little more loosely than federal agencies. Their websites may include directions for preparing proposals, but it is usually necessary to consult with the appropriate program staff.

³ NSF does contribute to some very expensive projects such as the General Social Survey, the New Immigrant Survey, the Integrated Public Use Microdata Series Project. But, it usually does so on a collaborative basis with other federal agencies. Occasionally, NSF also sponsors special initiatives that will support larger awards than those that are typically made to individual researchers through the main programs, such as Sociology.

⁴ You should check with the funding agency about their policy regarding simultaneous submission of applications, if you are considering sending yours to more than one place.

Regardless of the agency or foundation that you are targeting there are some pretty generic things that you will want to (or be required to) include in your proposal. Below is a partial list:

1. **Project Summary.** Usually you will be required to begin your proposal with a brief summary of the project you intend to carry out. For NSF this is called the “Project Summary.” For NIH it is called a “Project Description.”
2. **Project’s Objectives and Scientific Importance.** You must provide a clear description of the objectives you expect to have accomplished by the time your project is completed. Furthermore, you should be able to describe the scientific importance of the project. That is, how will your project advance knowledge in the field?
3. **Project’s Innovation.** Funders are placing increasing importance on the ways in which proposed projects are “innovative.” In short, does your proposed research bring new thinking, data, or methods to the problem?
4. **Relevant Literature.** You should demonstrate a convincing familiarity with the previous work that has been done on the general topic that you are researching, and the literatures from which your research questions have been extracted.
5. **Research Plan.** The “heart” of your proposal will be the research plan. This is the main body of the proposal in which you describe exactly what you will do and how you will do it. You will describe a coherent set of research questions that will guide your project. Then, you will give a detailed description of how you expect to provide answers to those questions. Generally, you will identify a data set or data sets that will provide empirical evidence relevant to your research questions. You will also describe your methodological approach. It is critically important that you be able to convince the proposal’s reviewers (see below) that your data and methodology are capable of answering the research questions.
6. **Anticipate Criticism.** It is a good idea to anticipate criticisms that might be lodged against your research plan. Ask yourself, “What limitations might a reviewer see to my data or methodology?” As much as we would like it to be otherwise, there are *always* limitations. It is better for you to anticipate and deal with these criticisms. This demonstrates to the reviewers that you have thought carefully about what you are doing, and are aware of some potential pitfalls to the approach you are using. Reviewers like nothing more than to be able to say “gotcha,” by pointing out some potential problem that the proposal’s author ignored. You don’t have to devote a lot of space to this discussion, but its very presence in the proposal will look impressive. Ideally, you will also be able to suggest possible strategies for dealing with the challenges that you have identified.
7. **Budget.** You will have to tell the potential funder how much money you want and how you will spend it. This can be a very confusing and frustrating part of the proposal, especially the first few times you prepare one. There are strange terminologies and restrictions that you must learn. And, you are guaranteed to make mistakes; everyone does. Fortunately, help is available as you prepare your budget, and it does get easier with time. Because your budget will probably go through several iterations, it’s a good idea to allow plenty of time to develop the

budget, consulting with your departmental administrator, center administrator, College staff, or the Research Office along the way. In the budget you will ask for money to pay for such things as: personnel (including fringe benefits), travel, equipment, supplies, publication costs, etc. Then, after you've figured out how much you will need to carry out your research project, add another 56% for indirect costs (see above).

After you have completed all of the required sections of the proposal, there are still some things that you need to do before you send it off to the agency/foundation and wait for the big check to arrive.

1. **Human Subjects Approval.** It is very important that you obtain Human Subjects Approval from the Institutional Review Board at your school, if it is required. Any research using human subjects—even dead ones represented in historical census files—must obtain such approval. Each university has standing Institutional Review Boards (IRBs) that is made up of faculty, administrators, and representatives from the community. The Board must approve your plan for the use of human subjects before your research can begin. In many cases, especially if your project consists of secondary data analysis, you can get what is called an “expedited” review from the University’s compliance officer.⁵ In other cases, however, “minimal risk” or “full” review by the IRB will be required. The primary concerns of the IRB as they review your plan for the use of human subjects will be: (1) that you obtain informed consent from the subjects before they participate, (2) that any risk to which the subjects will be exposed be limited as much as possible, and that they be outweighed by the benefits of the research you are engaged in, (3) that you have a reasonable plan for handling the deception of subjects, if that is involved in your research, (4) that you let the subjects know where they can seek help if they are upset, disturbed, or feel harmed by things that happened during their involvement in your project (if relevant), and (5) that the confidentiality of the subjects participating in your research be absolutely protected. The IRB is **NOT** interested in the “science” of the project, unless they must weigh the potential risks versus potential benefits of the work you are doing. It is my experience that compliance officers and IRBs try to accommodate the research needs of social scientists. They are not in the business of inventing problems or exaggerating the severity of existing problems. Though, of course, this may vary from school to school and IRB to IRB. You will be able to obtain information about the procedures required to obtain human subjects approval from the University of Washington’s Human Subject Division website,

<http://www.washington.edu/research/hsd/>

⁵ The University of Washington’s Human Subjects Division (HSD) recently revised its policy regarding research using publicly available data. The HSD maintains a list of approved archives and datasets that have received a type of pre-approval. Research using those data is not considered to be using human subjects and, therefore, does not require IRB approval, see the following website:

<http://www.washington.edu/research/hsd/formRetrieve.php?ver=accreditation&id=188>

And, remember that you must also obtain approval to use non-human animal subjects if they are going to be involved in your research.⁶

- 2 **Institutional Approval.** You can't just write a proposal then send it off to the potential funding source. Even though you are the researcher who will be responsible for carrying out the project, any grants you receive by writing proposals will actually go to your university or research foundation. They are the ones who will receive the money from the funder, and they are the ones who will administer the grant money while you have it. You will never see a dime of the original award!⁷ Because of this arrangement, it is actually the university or research foundation that submits the proposal to the potential funder—on your behalf. So, having made arrangements for human subjects approval (if it is required in advance), you will ultimately take your completed proposal to the appropriate university office and have the appropriate institutional representative sign the “face page” of the proposal, along with any special certifications pages that must be included (e.g., that this is a drug-free work environment, that the university is in compliance with all federal rules and laws regarding research grants, that you are using the correct indirect cost rate, etc.).⁸ The final step in the submission procedure is to have the correct number of copies made (this varies from agency to agency) and sent to the correct address. There seems to be a strong professional “culture” which encourages researchers to wait until the very last minute to submit their proposals. Believe it or not, I have heard of cases in which a researcher actually flew to Washington, D.C. to deliver a box of proposals to NIH by the required deadline. Now, with Grants.gov, it should never be necessary (or even possible) to go to such lengths to beat a submission deadline. My advice is to plan ahead, give yourself plenty of time, and send your proposal in a week or so early. Your nerves and stomach will thank you. The Research Office will, too.

THE REVIEW PROCESS

You have now launched your precious proposal on an interesting journey. Over the course of the next several months it will be exposed to “the review process” used by whatever agency or foundation you submitted it to. These vary significantly across agencies and foundations, so it is impossible to describe in detail exactly what will happen to your proposal at every possible funding source. So, I will focus on the procedures used

⁶ I believe that most funding agencies will now review proposals for which human subjects approval is “pending.” This must be indicated on the face page of the proposal. If an agency wants to fund your project you must complete the human subjects approval process before they will send the award to your university or research foundation.

⁷ On one occasion I did receive in the U.S. mail a check for \$480,000 from a foundation. Unfortunately, it was made out to the president of the university and I immediately forwarded the check to her—after running around the office and showing it to colleagues, of course.

⁸ Prior to having the Office of Sponsored Programs approve your proposal, you will also be required to have approval from your department and college. At the University of Washington, the process of receiving approvals from various offices has been streamlined by the SAGE system: <http://ucs.admin.washington.edu/era/>. More and more, the process of submitting grant applications takes place electronically. At NSF and NIH the days of hand-written signatures and the submission of multiple copies of an application are gone.

at NSF and NIH, but many of the steps are pretty generic and will be used at other agencies and foundations as well.

1. **The Reviewer.** The agency will have your proposal reviewed by experts in your field. The actual number of experts who will paw through your proposal varies greatly. But, be assured, it probably will be many! The reviewers will read your proposal carefully, paying special attention to what you plan to do and how you plan to do it, and less attention to how much money you are asking for. They will be asking themselves whether your proposal describes research that is *good* and *important* science. They will evaluate your literature review. They will consider your proposal's objectives in light of previous research in the area. They will assess the appropriateness and soundness of your proposed methodology. All proposals will receive some kind of criticism from the reviewers—that's their job! Your job, on the other hand, is to avoid the "fatal flaws" that will kill your proposal deader than an armadillo on a south Georgia highway. Here are some fatal flaws that I've made myself, or pointed out in others' proposals:
 - **Unclear writing.** You can't expect a reviewer to be enthusiastic about your proposed research if they cannot figure out what it is that you intend to do. Try to avoid the jargon-laden and obtuse writing style that social scientists seem to love so much. Write as clearly as you can, and have colleagues read your proposal to make sure that it is understandable.⁹
 - **Unfamiliarity with important research.** Reviewers expect you to be familiar with previous work on your topic. This doesn't mean that you have to include an exhaustive bibliography in your proposal. But, you should be pretty darned sure that you've included the most important research that has preceded you.
 - **Mismatch between research questions and research plan.** It is important that there be a connection between the different parts of your proposal. Reviewers will not be happy if the major research questions that motivate your proposal are only loosely related to your research plan.
 - **Failure to give "the bigger picture."** Reviewers want to be convinced that you are involved in important research that will make a contribution to the field. Sometimes it is easy for proposal writers to get too wrapped-up in the minutiae of the work they intend to do, and fail to be clear about the ways in which the output from your project will advance knowledge. So, at some point, step back from the details and think about the importance of your research to the field in which you are working.

How your proposal is "scored" by reviewers will vary. At NSF proposal reviewers are asked to rate your proposal as: Excellent, Very Good, Good, Fair, or Poor. You will probably need a number of "Excellents" and "Very Goods" to be

⁹ For an excellent discussion of how to write good non-fiction I recommend, *On Writing Well: The Classic Guide to Writing Nonfiction*, by William Zinsser (New York: HarperCollins, 2006).

successful, though that is not always the case. At NIH reviewers are asked to assign a numerical score to each proposal, using the following ranges as a guide:

1.0 - 1.5	“Outstanding”
1.5 - 2.0	“Excellent”
2.0 - 3.0	“Very Good”
3.0 - 4.0	“Good”
4.0 - 5.0	“Acceptable”
Or,	Not recommended for further consideration

Most panels at NIH practice what is called “streamlining.” That means that roughly one-half of all proposals may be not be discussed at the panel meeting, and are not assigned a numerical score. Authors of streamlined proposals will receive reviews from the primary, secondary, and (possibly) tertiary reviewers, but they won’t receive a priority score or percentile (see below).

- The Panel.** Eventually, your proposal will be discussed by some kind of review panel. The panel may or may not include the reviewers of your proposal. At their meeting, which usually lasts one or two days, the panel will discuss your proposal, along with lots of other proposals. In most cases two or three panel members will have been assigned responsibility for leading the discussion of your proposal. After they have made their comments, other panel members are free to contribute to the discussion. Many of them will not have read your proposal, so the two or three panel members assigned to your proposal will play a very, very important role in your chances of getting funding. An especially ardent advocate can increase significantly your chances of success. A vocal critic can spell doom. My experience on these panels has impressed me with the professionalism of panel members and with their commitment to making good, well-informed recommendations to the agency. You have to remember that each panel will be considering many proposals, and only a relatively small number can be funded. So, even some very fine proposals will not be funded.
- The Decision.** Panels use various methods to arrive at a decision about which projects should be funded and which ones should not be funded. The NSF Panel will consider the evaluations of the panel members, plus any evaluations by outside reviewers that have arrived by the time of the panel meeting, to reach a decision. They will group proposals into three categories. The “*definitely fund*” category will include a very small number of proposals that will almost surely receive some financial support. The “*probably fund*” category is larger, and will be further grouped into “high,” “medium,” and “low” priority. Depending on how much money is available, and how many proposals fall in each category, all or most of the high priority proposals in the “probably fund” category will be funded and a smaller number of medium priority proposals will receive awards. It is pretty unlikely that a proposal falling in the low priority category will be supported. The “*do not fund*” category is also large and includes proposals that were not recommended for funding by the panel.¹⁰

¹⁰ I have never served on the regular Sociology NSF Panel, so this description is based on information that I have gathered from actual panel members, NSF program staff, and service on special NSF panels.

NIH panels use a somewhat different procedure. The panel members assigned to your proposal will report their numeric score (see above) for the proposal. After your proposal has been discussed, the panel chair will ask all panel members (whether they have read your proposal or not) to assign final scores, based on their evaluation of the proposal and the discussion that they just listened to. At a later time, the program staff will compile all of these numbers and compute an average which becomes your “priority score.”¹¹ The lower your priority score, the better—with 1.0 being the best. In most cases, your priority score will be used to compute a “percentile” for your proposal. NIH uses percentiles differently from the way we teach them in our statistics classes. So, a lower percentile is better than a higher percentile. For example, a percentile of 10, means that 90% of all proposals received worse scores than yours. Each cycle of competition will have what is called a “funding line.” That is the percentile below which proposals will receive awards. For example, a typical funding line might be 15. If your proposal received a percentile score of 15 or lower, then you are among the lucky few who will actually receive a grant.

As a rule of thumb, you should expect less than 1-in-5 of all proposals to be funded during a given review cycle.¹²

You will be notified by NIH of the outcome of the review of your proposal via the eRA Commons website. NSF now sends email messages to principal investigators to inform them of the fate of their applications. Sometimes you will also receive a phone call from the program officer (see below) who has been assigned to your application. It might not be immediately obvious whether you got the grant or not. For example, NIH will let you know the priority score and percentile for your proposal, but may not be able to tell you immediately whether it will be funded. NSF may be willing to tell you which of the three categories your proposal fell in, but not necessarily whether it will be supported.

4. **Program Staff.** Each agency, or foundation, will have program officers who oversee this entire process, and actually translate all of these steps into the awarding of a grant. In most cases, they will adhere very closely to the recommendations of the reviewers and panels as they make their own recommendations to higher-level agency authorities. They do, however, have some discretion that they will exercise occasionally. For example, NIH may dip down below the funding line to support a project that is especially relevant to the mission of an institute. Or, NSF staff may include their own judgement in deciding

¹¹ With the new electronic submission and review procedures used by NIH, priority scores are generally available quite soon after the study section meets.

¹² “Pay lines” at NIH have been fluctuating substantially during the last few years, and they depend on the funding mechanism that you have applied to. Most sociologists will apply for R01 (larger projects, bigger awards), R03 (smaller projects, limited awards), or R21 (pilot or exploratory studies, limited awards but larger than R03s) research grants. There is also a series of funding mechanisms that are targeted more toward career development. These include the K01 award (mentored research scientist development award) and K99 award for post-docs (pathway to independence). There are also funding mechanisms for pre-doctoral students (F31) and post-doctoral students (F32) These mechanisms are described in more detail on the NIH website.

which proposals to support in the “medium” priority group of the “probably fund” category.

In most cases, program staff encourage researchers to contact them before they prepare their proposals, or after their proposal has been reviewed. I have found the program staffs at NIH and NSF to be very approachable and helpful. At the same time, however, you don’t want to make a pest of yourself, or whine and complain about every decision that goes against you. But, if you are looking for guidance and helpful insights, then the program staff are often a good resource.

WHAT DO YOU DO NEXT?

If you are one of the lucky minority to receive funding for your project you will be notified by your university or research foundation that they have received an “award letter.” Once they have an award letter, they will establish an account for your project. At that point you can start spending money to your heart’s delight—as long as you adhere to agency and university rules! Your primary objective as you spend your grant money is to work toward the publication of your research--especially publications in high quality outlets. Most likely you will submit additional proposals in the future. A productive track record from previous grants will improve your chances of getting more grants. In fact, NSF formalizes this consideration by requiring applicants to include a section called “Results From Prior NSF Support.” They are looking for evidence that you were productive on past projects. A former NSF Sociology program officer once told me that he considered grants from NSF as a strategy for “buying articles in *ASR* and *AJS*!”¹³

Unfortunately, it is more likely that your proposal will fall into the much larger category of those applications that do not receive funding. It is natural to be disappointed when you receive this news, and to ask why God even bothered to put you on this earth. However, you should remember that only a small number of proposals are funded on their first submissions. Most grants are awarded to proposals that have been revised and resubmitted, sometimes more than once. So, **persistence is the key**. After you receive the reviews for your proposal (still sometimes referred to as the “pink sheets” from the time when researchers received carbon copies of typed reviews on flimsy pink paper) read them carefully and try to identify the key concerns of the reviewers and/or panelists. Give the reviews careful thought and try to decide whether you can correct the problems, or address the concerns, in a revised proposal. If so, then get to work. As you plan for, and work on, your revision you should think about asking for advice—from colleagues or program staff. You might email the appropriate program officer at the agency or foundation and ask them if they would be willing to discuss the review of your proposal in preparation for a revision. Colleagues who have experience writing, and revising, proposals can also provide very valuable advice. Finally, as you think about writing, or revising, a proposal it is important to remember that very, very few social scientists have received big checks in the mail because an agency or foundation heard through the grapevine that they were planning an interesting and important research project. You have to ask.

¹³ These are, respectively, the *American Sociological Review* and the *American Journal of Sociology*. Along with *Social Forces*, they comprise the “top three” journals in the field.