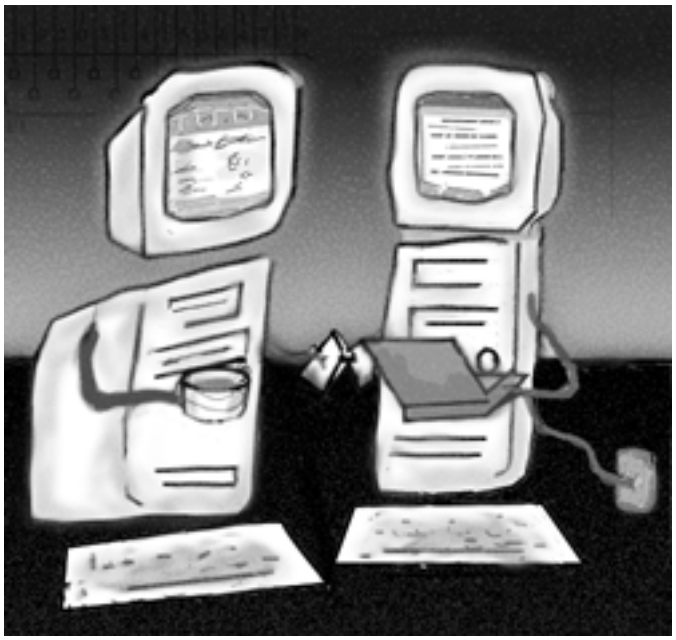
Updated Version of this Article

Networking on the Network

by *Phil Agre*

Several million people employ electronic media for some significant portion of their professional communications. Yet, in my experience, few people have figured out how to use the internet productively. A great deal of effort goes into technical means for finding information on the net, but hardly anybody has been helping newcomers figure out where the net fits in the larger picture of their careers. These notes are a first attempt to fill that gap, building on the most successful practices I have observed in my fifteen years on the net. I will focus on the use of electronic communication in research communities, but the underlying principles will be applicable to many other communities as well.



Networking: What and Why

The first thing to realize is that Internet-world is part of reality. The people you correspond with on the network are real people with lives and careers and habits and feelings of their own. Things you say on the net can make you friends or enemies, famous or notorious, included or ostracized. You need to think about and consciously choose how you wish to use the network. Regard electronic mail as part of a larger ecology of communication media and genres -- telephone conversations, archival journals and newsletters, professional meetings, paper mail, voice mail, chatting in the hallway, lectures and colloquia, job interviews, visits to other research sites, and so forth -- each with its own attributes and

strengths. The relationships among media will probably change and new genres will probably emerge as the technologies evolve, but make sure that you do not harbor the all-too-common fantasy that someday we will live our lives entirely through electronic channels. It is simply not true.

One might engage in many forms of communication on the net as part of a wide variety of professional activities. Underlying all of these disparate activities is the activity of building and maintaining professional relationships. Unfortunately the existing mechanisms for electronic interactions, by seemingly reducing people to abstractions and codes (like ``pagre@ucsd.edu''), make it difficult to keep this deeper dimension of interaction in mind. The truth is that the world is made of people. People out of communities are like fish out of water. Research of all kinds depends critically on intensive and continually evolving communication among people engaged in related projects. Networking cannot substitute for good research, but good research cannot substitute for networking either. You cannot get a job or a grant or any recognition for your accomplishments unless you keep up to date with the people in your community.

Many people resist the idea of networking for a variety of reasons. They associate it with the greasy connotations of ``knowing the right people;'' they have a distaste for ``politics;'' they refuse to ``play the career game;'' because they associate it with ``kissing up to the powerful.'' They have learned that useful knowledge about how the world works is necessarily ``cynical;'' or they think that networking supposedly takes time away from ``getting real work done.'' The manipulative overtones of ``How to Win Friends and Influence People'' hang heavy in the air. Indeed, people will accuse you of all sorts of terrible things if you admit to having worked-out ideas about networking. Many people, watching the real networking experts in action, assume that they must know some dark, inaccessible secrets that make it all easy. This is all terribly unfortunate: people who do not learn to network are less likely to succeed.

The Basic Steps

Here, then, are some of the fundamentals of professional networking. They will sound cumbersome and abstract. You will be able to skip some of the steps as you get established in your field, but if you are starting from zero then the process really is quite complicated. 1) Know your goals. 2) Identify relevant people. 3) Court these people individually. 4) Meet these people face-to-face at a professional meeting. 5) Exchange drafts. 6) Follow up. Lets look at each in turn.

1) Know your goals

Clear goals will help you maintain focus. Do not use your professional networking to achieve personal goals such as finding friends. Electronic mail cannot help you much here. Indeed, you will need to make sure that your goals are not defined narrowly in terms of electronic mail. Once you have begun corresponding with people you consider wise, you can begin to seek advice from them. Asking for advice is an art in itself, and other things being equal it is best done face-to-face, but once you know someone fairly well on a face-to-face basis you can move some of the discussion to e-mail.

2) Identify relevant people

Awful as it might sound, ``relevance'' here is reckoned in functional terms: given how your particular professional world operates, with whom do you have a mutual interest in making contact? In the world of research, mutual interest is almost always defined through the content of your research: you wish to contact people whose research bears some important relationship to your own. How do you identify these people? Most of the methods are wholly mundane: asking people with good networks, chance mentioning of people in conversation, and habitually scanning bibliographies, abstracts, and conference proceedings.

Listening in on discussion groups is one way of finding relevant people, especially the ones who are not so famous. If someone in a discussion impresses you, fight the temptation to approach them right away. Instead, consult your library's catalog and periodical indexes, look the person up, read a sample of what they have written (especially any books they might have published -- at least skim them), and then proceed with the next step. Then use standard Web search tools to locate this person's home page, which might include some citations or even complete papers. Only if you cannot find any relevant publications should you consider sending the person a concise note saying, ``What you said about XYZZY is interesting to me because of YYY; if you have an article on the subject ready to distribute then I'd much appreciate a copy.''

Or, having listened in on a discussion group for a while and observed its customs and conventions, you might consider contributing something yourself. Do not just react or chat. Instead, write a really intelligent, self-respecting, unshowy, low-key, less-than-one-page message that makes a single, clearly stated point about a topic that is relevant to both their interests and your own, preferably but not necessarily as a contribution to an ongoing discussion. Since your message might be read by people all over the world, avoid any slang or jokes which might not travel well. Sit on this message overnight to make sure you are not just reacting to something.

Having thus refined your message, contribute it to the discussion group and see what happens. If nothing happens, do not be too concerned. If it starts a discussion then listen respectfully, constructively acknowledge all halfway worthwhile responses, and be sure you are not just reacting to things. This process might flush out some people worth adding to your network. Or it might not. In any case it will get your name out and will, with remarkable efficiency, establish your reputation as an intelligent and thoughtful person. Remember: do not bother doing any of this until you have written up some work and are ready to actually start building your network.

One thing that does not work, in my experience, is broadcasting a message to half the world saying, ``I'm looking for people who are working on such-and-such,'' or ``I've written papers about X and anyone would be welcome to read them.'' I do not know why exactly, but such broadcasts either do not reach the most worthwhile people, or the most worthwhile people are too busy to answer them. Whenever possible, then, approach people as individuals. What you *can* do is to send messages individually to small numbers of people saying, ``Can I ask your help? I'm trying to locate people who

are working on such-and-such. I've tried the obvious sources in journals and indexes, but without much luck. Any leads you can offer would be much appreciated." Only do this if you have a specific purpose in mind for finding such people, such as organizing a workshop or other professional activity.

3) Court these people individually

The right way to do this is not entirely obvious. Unless you are already well known in the person's field, you should NOT simply approach them and say, ``Hey, I hear you're interested in XYZZY." Professional life calls on you to construct and maintain a complex professional persona that is composed largely of your research, writing, and professional activities.

Therefore, in approaching possible professional contacts, you should let your research articles be your emissaries. (If you haven't written anything yet, let your networking wait until you have. Unpublished articles, conference papers, and research reports are all adequate for this purpose.)

In the old days, the article and letter you sent to approach someone were both printed on paper. Should you use electronic mail instead? I actually recommend using paper. At least you should not use electronic media just because they are fun. For one thing, paper is much easier to flip through quickly or to read on the subway. It is also much easier to write comments on. Use your judgement. If you do decide to employ electronic mail for this purpose, use just as much care as you would on paper. Remember that first impressions count. And don't try to use e-mail for the get-to-know-you type of chatting that should logically follow at this point.

Here is the procedure:

- choose someone you wish to approach and read their work with some care.
- make sure that your article cites their work in some substantial way (in addition to all your other citations).
- mail the person a copy of your article.
- include a low-key, one-page cover letter that says something intelligent about their work. If your work and theirs could be seen to overlap, include a concise statement of the relationship you see.

The tone of this letter counts. Project ordinary self-confidence. Refrain from praising, fawning, self-deprecation, cuteness or making a big deal out of it. Do not sound like you're presupposing or demanding that you get a response. Try a formula such as, ``If you should happen to have any comments, I would be most interested to hear them." A good final sentiment for your letter is, ``Will you be at such-and-such conference?"

Don't drop dead if you don't get a response right away. Anybody who is not wholly egotistical or seriously famous will appreciate your taking the trouble to write them. In my experience, most everyone in the world of research is desperate for someone to actually understand what they are saying. If they do not reply, the most likely reason is laziness (also known as ``busyness").

Do not use citations as a form of flattery. This sort of thing fools nobody. Instead, think of a research paper as a kind of open letter, with the people you cite included among its addressees. The research literature is a conversation, and your paper is a way of starting new conversations with people in your area.

4) Meet these people face-to-face at a professional meeting

I believe firmly, notwithstanding all the hype about virtual reality and electronic communities, that electronic communication does not make face-to-face interaction obsolete. Instead, as I said at the outset, you should think of e-mail and face-to-face interaction as part of a larger ecology of communication media, each with its own role to play. In particular, I honestly believe that you do not really have a professional relationship with someone until you have spoken with them face-to-face at length, preferably in a relaxed setting.

Having said that, the availability of e-mail will nonetheless bring subtle changes to the ecology of communication in your field. This is particularly true with regard to the telephone, whose uses change considerably in e-mail-intensive communities -- so much so, in fact, that many people nearly stop using the phone altogether (or never learn how) and try to use e-mail for unsuitable purposes like asking discussion groups for information that could have been gotten more easily through resources listed in the front of the phone book. But the role of face-to-face interaction will change as well, particularly since many kinds of routine work can be conducted almost as easily at a distance electronically as in formal meetings face-to-face. Electronic communication might even allow face-to-face interaction to shift its balance from its practical to its ritual functions. In any case, the general lesson is to pay attention to the relationships among media so you can use the right tool for each job.

Research people normally go to great lengths to attend conferences and other professional meetings, and computer networks are unlikely to change this. Before you go to a professional meeting, take a minute to flip through your e-mail correspondence and make a list (ideally on paper) of all the people you have ``met'' on-line who might attend the conference. Few things are more embarrassing than drawing a blank when someone at a conference approaches you and tries to pick up a conversation begun on e-mail.

More suggestions for socializing at conferences, largely adapted from some notes by Dan Ryan.

- Many conferences are proceeded by smaller one-day or two-day workshops. These events will usually provide a more focused and comfortable occasion for mixing with people than the larger conference. It is much easier to approach someone at random during such an event.
- Stay in the main conference hotel if at all possible; when you check in, locate the fitness center, if any, and the nearest good breakfast place.
- Carefully study the conference schedule to determine which talks you'll be attending, and then find out in advance where the meeting rooms are. Once the event gets rolling, act like a host. Introduce people to one another, include them in things, and notice when they are feeling bad or

being oppressed.

- Practice your talk several times in realistic conditions before traveling to the conference, so you can be confident of doing well when the time comes.
- Go ahead and attend the talks, especially the ones that specifically seem likely to be valuable to you. But spend most of your time tracking particular people down and talking to them. Unless you really know what you are doing, you should keep the conversation to safe, professional topics. Ask them intelligent questions about their work -- that is, questions you genuinely want answered. If the conversation does not seem to be going anywhere, that is not your fault. Just say, ``Nice chatting with you!'' in a pleasant way and let it go.
- Rarely pass up an opportunity to go out with a group to eat. Relax. Buy a book. Take care of yourself. Some technically advanced conferences have created Web-based systems for helping attendees connect with each other and schedule their time before the meeting even begins; you should definitely advocate that such a system be built for any conference that you might be involved in organizing.

If the person you wish to approach for a conversation is significantly more powerful than you, then the prospect of conversing with them will probably make you uneasy. That is okay. Concentrate on meeting people who intimidate you less and your courage will grow over time. Your single most important audience is actually not the power-holders of your field anyway, but rather the best people of your own professional cohort, especially other students. These people share your situation and will usually be happy to talk to you.

5) Exchange drafts

The next step, I'm afraid, depends on the power hierarchy. If someone is senior to you, your goal is simply to get on their radar screen -- one chat per year is plenty. If someone is more or less equal to you in the hierarchy, and if they still strike you as relevant, worthwhile, and trustworthy, it will probably be time to exchange pre-publication drafts of new articles. Again, keep it low-key: pass along a draft that you're ready to circulate and invite ``any comments you might have.''

Once again, you should decide whether to use paper or electronic mail to exchange comments on drafts of articles. My own practice, usually, is to highlight passages and write brief comments on a paper copy of a draft, take a moment to clear my mind and ask myself what the overall point was and what my overall constructive response is, and then use e-mail to send the author longer and more intelligible versions of those comments. Since I do this quickly after reading the paper (within a couple of days) while my impressions are still fresh in mind, the resulting e-mail messages are limited primarily by how fast I can type. As a result, they can be unusually helpful even though they do not actually take that long to prepare. If necessary I will also offer to paper-mail the author the marked-up draft for the sake of minor proofreading details that are too much trouble to type in. When you do send someone a marked-up draft, put your name and phone number on it so they can keep track of whose comments were whose.

Upon receiving such a draft yourself, take the trouble to write out a set of comments on it. Make sure

your comments are intelligent, thoughtful, constructive, useful and legible. Good comments include

- ``so-and-so's work might be relevant here because ...",
- ``I can imagine someone from such-and-such background arguing that you're wrong here because ...",
- ``I didn't understand what you meant by such-and-such; do you mean X, or Y, or what?",
- ``another question that might be interesting to discuss here is ...",
- ``this point could probably use more explanation",
- ``I found the transition here to be jarring", and
- ``would it correct to say that you're arguing that ...?".

If you are uncomfortable writing critical comments, then:

- frame them with positive comments (``This is obviously an important topic and you've made some valuable observations"),
- develop a lexicon of hedges (``I'm not clear on ...", ``Maybe..."),
- emphasize what's possible instead of what's wrong (``Maybe you can build on this by ...", ``Perhaps you can further clarify this by ..."), own your feelings and judgements (``My sense is that ...", ``I had trouble with ...", ``This felt vague to me.", ``I'm worried about the assumption that ..."),
- and keep to specifics (``How does this step follow?" as opposed to ``Woolly and vague").

These rhetorical devices may seem baroque at first; their purpose is to let you express yourself honestly without fear of giving offense.

Most of your comments will be responses to local issues in their paper. When you get done with these local comments, but while the issues are still fresh in your mind, it is good to take a step back. Ask yourself, ``What is the really outstanding paper that is in here trying to get out?" Then explain to the author what this really outstanding paper is like, without implying that the paper is not already outstanding.

When you get someone else's comments on your draft, you should take them seriously without regarding them as nonnegotiable demands. When they suggest that you change something, distinguish clearly in your mind between the problem they were having and the solution they suggested. If they saw a problem (grammar, logic, fogginess, etc.) then a problem probably does exist and you should probably fix it in some way. However, their particular solution might not be the best one, and you should not feel bound to adopt it. In fact, the most common error in using such comments is to follow them superficially, making the changes that entail the least possible labor, without honestly asking yourself what the underlying problem (if any) might be.

If somebody comments a draft for you, thank them, include them in the paper's acknowledgements, and be willing to reciprocate. (You do not need to make an explicit offer of reciprocation, though, any more

than you need to express your willingness to pass the salt -- it is simply understood.) Doing so, even once, will almost certainly cement a long-term professional relationship -- a new member of your network. What is more, having thoughtfully reflected on others' comments on your work will help you to internalize their voices.

6) Follow up

This is one area where e-mail makes a qualitative difference. Once you have established a professional relationship with someone, e-mail provides a convenient way to maintain a steady, low-key background of useful two-way interactions. You might wish to forward things to people (abstracts, interesting messages, conference announcements, press releases, book reviews, whatever) depending on their interests. Or you might wish to recommend their papers (in a low-key way, with a concise summary and a complete citation, and only if you really mean it) to e-mail discussion groups. Do not overdo it, and pay attention to whether the gesture is being reciprocated.

After a (long) while you might consider building an electronic mailing list of people who share your interests and would like to get interesting stuff forwarded to them routinely -- including, of course, your own abstracts and shorter papers. Never add anybody to such a list (or any list) without asking them, and never pressure them or make a big deal out of it.

E-mail is also obviously useful for a wide variety of other purposes, for example scheduling and organizing professional events. Make sure that some purpose is actually being served; don't engage in professional e-mail correspondence simply for the sake of it.

Keep coming up with simple ways to be useful to the people in your network. A few times a year is plenty. Mention their work to other people. Plug them in your talks. Include them in things. Get your department or laboratory to invite them to speak. Put them up when they come to town. And invent other helpful things to do that nobody ever thought of before. None of this is mandatory, of course, but it helps. And I cannot repeat this often enough: keep it low-key. Never, ever pressure anybody into anything. Do not say ``please" or ``I know you must be very busy" since these phrases are often experienced as a kind of subtle pressure through emotional manipulation. Instead, try phrases like ``If you have any time to look at this, I'd appreciate any comments you might have." Never heap so much unsolicited help on someone that they feel crowded or obligated. Do not complain. Do not approach the whole business as a matter of supplication and begging, but rather as ordinary cooperation among equals. Likewise, make sure you are exchanging these favors out of courtesy and respect, and not as any kind of phony politicking -- people can spot phonies a mile off. Build relationships with personal friends outside of work so you will not be unconsciously trying to get professional contacts to play roles in your personal life (for example, the role of a sounding board for your troubles). If you do not hear from someone for a while, let it ride. If you feel yourself getting obsessive about the process, go talk it out with someone you regard as wise.

This step-by-step procedure is obviously oversimplified and somewhat rigid. Nevertheless, some basic

points should be clear:

- It takes time -- you have to be patient and let it happen;
- It focuses on particular individuals and particular relationships;
- It produces bonds of reciprocal obligation through the exchange of favors;
- It calls for a significant but manageable up-front investment;
- It requires you to cultivate a realistic awareness of power;
- It involves a variety of communication media; and
- It forces you to develop communication skills in each of these media.

Electronic Media: Some Cautions

Having surveyed the basics of networking and professional relationships, it is time to consider the role that electronic communication can play. The most important thing is to employ electronic media consciously and deliberately as part of a larger strategy for your career. So long as you have your professional hat on, every message you exchange on the network should be part of the process of finding, building, and maintaining professional relationships. I cannot emphasize this strongly enough, because electronic mail seems to provide endless temptations to the contrary.

The temptation to react

Most on-line discussion groups consist largely of people reacting to things they've seen, acting on impulse without thinking through their own agenda in the situation. E-mail encourages this kind of reactive behavior by making it easy to respond to a discussion with only a few rapid keystrokes. Keep your cool. If someone abuses you in an e-mail discussion, hang back. Get the useless anger out of your system by hyperventilating and screaming a few times.

Unless you are really sure that you have gotten the anger out of your system, go sleep on it overnight. When you do respond, go ahead and reveal your anger (``I felt angry when I read your message."), but then take care to paraphrase your interpretation (``I took you to be accusing me of trampling on your area of expertise."), admit the (usually very real) possibility of misinterpretation (``Perhaps I wasn't clear, or perhaps I've misinterpreted your response."), outline the facts as you see them (``My understanding is that ..."), and politely invite a response (``I'd greatly appreciate hearing your perspective. Thank you."). Part of you may be howling for revenge the whole time you are typing this stuff, and the howling will be all the louder because you are sitting alone in a room with just a computer terminal to inhibit you. Nonetheless, resist the howling and you will be surprised how often you can rescue a bad situation and even gain the respect of your antagonist.

The temptation to treat people like machines

One seeming consequence of the intangibility of e-mail is that basic politeness often erodes. If you send

someone a message, address them by name. And if somebody on the net helps you out (for example by providing some information in response to a query on a discussion group), say ``Thank you'' and perhaps give a brief account of how their help was helpful. If their message to you was detailed, for example, point out that you noticed this by saying ``Thank you for your detailed message.''

More generally, practice coming up with good, non-obvious things to say about people and their actions. It is harder than coming up with bad things to say, of course, but it makes you much more perceptive, articulate, and diplomatic. It also helps you to offer criticism, since people find criticism much more useful when you put it the context of positive observations.

The temptation to pretense

Electronic communication affords the illusion of semi-anonymity: since people only know you by what you type, you may tend to lose the inhibitions that normally keep you from pronouncing on matters that you are not really informed about. Yet pretending to know things is just as bad an idea on e-mail as it is face-to-face. Phrases like ``I think I recall that ...'' and ``I'm not a lawyer but ...'' are red flags -- indications that you are probably about to do more harm than good. Keep focused on your own unique professional contributions and let the random chatter slide.

The temptation to paranoia

Along with your own near-anonymity goes the frequent difficulty of knowing who exactly is receiving your discussion-group messages. As a result, you may just listen in, terrified to say anything for fear that you will be dumped on by powerful experts. The solution is to focus on the careful, step-by-step process of approaching individuals, leaving group participation until you feel more comfortable.

The temptation to get overwhelmed

It is easy to sign up for everything that sounds interesting. If you are getting more than about twenty messages a day, or if you hear yourself saying ``It's all I can do just to delete all the messages that fill up my mailbox,'' then perhaps you should review your goals and adjust your mailing list subscriptions accordingly. If you are on a high-volume list, investigate whether it has a ``digest'' option that packages the messages for each day or week into one big message.

The temptation to get addicted

Addiction means getting overwhelmed on purpose. Few people take e-mail addiction seriously, but it is a genuine addiction and it can be a self-destructive waste of time. Ask yourself: Can I just decide to give it a rest for a few days? Am I reading all this e-mail because I get some identifiable value out of it, or am I doing it to distract myself from my feelings? If the answers to these questions might be yes, go find a twelve-step recovery group in your community.

The temptation to waste time

Random exploration will rarely yield network information resources that are actually useful to your real career goals. Useful information is always bound up with useful people. Therefore, your explorations of the network will most usefully be guided by your goals and structured by the search for people to add to your network. If you really do care about on-line information resources, develop a good relationship with a librarian. Librarians are almost uniformly wonderful people who enjoy helping you find things, whether on the net or elsewhere.

The temptation to blame e-mail for your problems

If you are a beginner with electronic communication, you will probably have a few mishaps at some point. When this happens, you might be moved to blame the medium. You will find yourself saying that e-mail is dangerous or worthless or overwhelming. But ask yourself: do similar things happen in group meetings or conferences or over the telephone or in paper mail? E-mail has its shortcomings to be sure, but it is a tool just like any other. You will have to learn how to use it, what to use it for, and when not to use it.

Conclusion: Community-Building

A community is made of people, not computers. It is tempting to simply announce a new mailing list, gather lots of names, and hope that something good happens. Unfortunately, it rarely works very well. Even when you do start feeling good about some of the interactions you have had on the net, human possibility really does run deeper than abstract network-interaction is likely to afford any time soon.

In short, I see no substitute for the hard human work of building community one person at a time, on the basis of openly explored shared interests, through interactions in a variety of media. Communities built in this fashion hold together because they are fastened with the real glue of human relationship, not just the technical glue of codes and files. Just as relationships are conducted through a variety of media, so are communities. To whatever extent is practical, a community has to meet in person, eat and drink as a group, discuss various formulations of the shared vision that brings them together, and engage in concrete collective projects. Suitably constructed electronic media will often have a useful role to play in these activities.

You may be overwhelmed at this point by the degree of structure I seem to be placing on your electronic interactions. While these guidelines are not set in stone, neither are they arbitrary. They are simply an application to electronic communications of the larger, preexisting social logic of professional communities. I have restricted my attention to one kind of community, namely research communities based on publication. By learning to use electronic media wisely, we do more than help our own careers -- we also contribute to a vision of community that acknowledges human life as it actually is.

Acknowledgements

This essay has been improved by comments from Mark Ackerman, Sue Allen, Robert Barger, Barbara Brett, Phil Candy, Harry Collins, David Crawford, Paul Dourish, George Duckett, Ken Friedman, Jonathan Grudin, Michael Helm, Rebecca Henderson, Martha Hiller, Bill Humphries, Larry Hunter, Larry Israel, Lisa Jadwin, Mihail Jalobeanu, Matthew Jones, Simon Peyton Jones, Tom Lane, Bettina Lange, Arun Mehta, Charles Rhyne, Yvonne Rogers, Alan Scheinine, Mark Smucker, Susan Sterne, Jozsef Toth, Jeremy Wertheimer, and Alan Wexelblat.

Author Bio

A more lengthy version of this paper can be found at the author's web site: http://communication.ucsd.edu/pagre. Phil Agre can be reached at:

Department of Communication
University of California, San Diego
La Jolla, California 92093-0503
USA

pagre@ucsd.edu