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**ASSOCIATION FOR WOMEN GEOSCIENTISTS**  
To **Encourage** the Participation of Women in the Geosciences,  
To **Exchange** Educational, Technical, and Professional Information,  
and to **Enhance** the Professional Growth and Advancement of  
Women in the Geosciences

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## Science in Japan:

### Women Fight Uphill Battle For Equity

Mariko Kato loves her husband, but 4 years ago she divorced him. It was strictly a divorce of convenience. Kato, a theoretical astrophysicist at Keio University, was fed up with the consequences of a Japanese law that requires married couples to take a single surname, generally the husband's. While legally she had changed her name, Kato was determined to use her maiden name professionally. But that meant every time Kato applied for a grant or a visa to travel to international meetings, she had to argue with uncaring bureaucrats that she and the scientists on the application were the same person. So in 1992, after 7 years of marriage, Kato divorced her husband, an astronomer at the University of Tokyo.

Katos' unusual domestic situation — she continues to live as a family with her former husband and their daughter — is part of a bigger problem facing female scientists in Japan. Although growing numbers are filling lab benches in Japanese universities and represent a vastly underutilized resource, women remain invisible to policy-makers. Almost nothing, for example, is being done about such issues as workplace discrimination, sexual harassment, and the lack of adequate child care. Reports issued by the Science and Technology Agency and the Ministry of Education, Science, Sports, and Culture (Monbusho) promote this idea of women's participation in science, but stop short of offering specific corrective measures. Indeed, a Monbusho publicist asked to locate anyone in the ministry who might be working on the issue paused before reply-

ing carefully, "That would be very difficult."

Why are women's issues not receiving more attention? One answer may be that conditions in academia, although difficult, are better than in the larger society. "Compared to working in a company, I think academics is more open to women," says Risa Kitagawa, a doctoral student in molecular biology at Nagoya University. But that tolerance falls well short of equal status. According to 1992 Monbusho figures, only 6.7% of women on natural science faculties are full professors, compared with 29.6% of male faculty. The U.S. figure, in comparison, is 19%, although the percentage of U.S. men in the top rank—42%—is also higher than in Japan. The vast majority of women faculty, 70.3%, occupy the lowest rung as research associates, whereas only 35.5% of men do. Women scientists are virtually nonexistent in high administrative posts, as symposium speakers, or as major grant recipients.

However, even that low visibility is a step up from a generation ago. "At Kyushu University in the 1970's, advertisements for academic posts said clearly these were jobs for men only," recalls Mitiko Go, a theoretical biologist, who once worked without pay at Kyushu and is now a full professor at Nagoya. Go suspects that most discrimination today takes a subtler form. "I myself can't say for certain that I've experienced discrimination—it's hard to see or prove," she says.

What is obvious to women researchers is the lack of social support for balancing the responsibilities of work and family. Although day care is widely available and inexpensive, persons who might provide child care after normal working

hours—including baby sitters and nannies—are rare. That makes it hard for mothers to put in the extra time to finish a crucial experiment or a grant proposal. Such programs as on-site day care and facilities for nursing mothers, common on U.S. campuses, are unknown in Japan. For Mariko Kato, divorce has eased the red tape in applying for grants and visas. But one obstacle may not be so easy to remove. Her in-laws have not been told, Kato says, because "they wouldn't understand" why it is so important for her to preserve her professional identity.

— June Kinoshita (Reprinted with permission from *Science*, Vol. 274, # 5284, 10/4/96, p. 50. Copyright, 1996, American Association for the Advancement of Science)

## Another Glass Ceiling?

Twenty-five million working women have no pension plans, and those women who have them can expect to receive less than half the benefits men get, Labor Secretary Robert Reich has reported. He called it 'another glass ceiling'. "For the most part, the problem of pension inequity is the product of women's career patterns and the realities they face in the working world." Reich told the 77th Annual Conference of Business and Professional Women. On average, women earn less money than men, which means their earnings-based retirement coverage and savings are less. Two-thirds of working women are in jobs with the lowest pension coverage rates, and approximately half work in small companies much less likely to offer pension plans.

A longer version of this story is available at: <http://www.onwis.com/business>.

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## Ethics Statement

AWG members shall conduct themselves in an ethical and professional manner.

# Gæa

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## President's Letter

Greetings from the Lower Hudson Valley of New York State! I'd like to introduce myself as the new President of the Association - and your representative to the rest of the geoscience community. My first duties were to chair the October Board of Directors meeting and represent the Association at various GSA functions the following week. I'm happy to say that I felt everything went very well, and I had a great time (even though I was suffering from a nasty case of the flu!).

I was delighted with the progress we made at the October Board of Director's meeting. We had just the right mix of familiar faces and new-enough "old hands" to keep us on track and enough "new blood" to open doors and bring in new opportunities. One of our big missions for this coming year will be to keep the energy high for continuing Association activities without interruption, and I think we're all excited about the potential for electronic communication to help us: by promoting continued communication between Board members, by facilitating Committee work, and by allowing access from the bulk of the Association members without the expense and hassle of regular mail. I'm a self-proclaimed computer nut, but I don't think my excitement at entering this new age is misplaced. In fact, I've been very proud to realize in this past year that AWG is at the absolute cutting edge of the use of electronic communications and we are setting the standard for all other geoscience organizations. Please feel free to drop me a line at any time at: axmk.hks@usa.net - I'm here for you!

— Allison Kozak, AWG President, Northeast Chapter

## Editorial Notes:

Earth science education for K-12 students has come a long way since I was in school. In all my junior and senior high school years there wasn't an inkling of the Earth in the standard physics/chemistry/biology classes. But I loved biology, and still recall with pleasure my lab notebook of collected, labeled, and sketched samples of the conifers—a true child of the Pacific northwest damp. Later I drew, in dye-inspired colors, the structures of microorganisms—retaining to this day a fascination with, and under-utilized skill in, microscopy.

But I err; there was a notion of the Earth in junior high geography class, and I loved outlining the continents in progressively lighter shades of blue from the margins into the oceans. My maps were works of art! We did learn the whereabouts of major rivers and natural resources, but it was all in the context of the world's nations and human history. The boundaries defining cultures and history were drawn along political lines, and we know, from the results of the World Wars, and more recently from the dissolution of the Soviet Union and Yugoslavia, how temporary those can be. Streams were seen as pipelines between resources and markets, and as memory aids to remembering which of the cities in France were associated with which industries! Streams were not regarded in terms of their drainage basins, so their study lacked the broader geologic, geographic and temporal contexts. We were not taught that they have been actively sculpting and reshaping the earth's landscape since there was dry land to sculpt, or that they are major players in the distribution of fertile soils, their presence or absence powerfully influencing the conditions of the earth's ecosystems. We were certainly not taught that water runs downhill both on top of and beneath the surface, and that in doing so, is capable of taking massive volumes of earth and human materials with it.

Well, that was over thirty years ago. Now I hold an advanced degree in geology, and make my living teaching a variety of earth sciences to community college undergraduates. I enjoy teaching, and have reason to think I'm doing a fairly good job of communicating the necessity for an earth science education. Now I am able to appreciate the efforts of geoscience educators of the past 30 years, who have labored to have this discipline included as an essential and integrated curriculum component at all K-12 levels. (I found it instructive that as I listened to the discussions taking place in AGI's GAP meeting at last October's GSA Convention, both the tenor of the meeting and the time on task were elevated when the topic was education!) But I

— continued on facing page

## Wanted: A Few Committed And Capable Individuals

### Call for Nominations

AWG's Nominations Committee is seeking candidates for AWG officer positions that will become open this fall. This is your opportunity to recommend an AWG member as a candidate, or to volunteer to run yourself. Being an AWG officer is an excellent way not only to serve the organization, but also to gain valuable leadership experience. Up to two candidates may run for each available office. The following positions are open:

**President Elect:** Term Length: Begins a three-year commitment-one year as President Elect, one year as President, and one year as Past President

The President Elect assists the President and learns as much as possible about AWG before assuming the office of President. She or he works with AWG's Legal Advisor and Bylaws Coordinator to make sure AWG meets its legal requirements, and works with AWG's management firm to "grow" the organization through membership drives. The President Elect chairs the Planning Committee, and is the officer to which the Outside Conventions and Chapter Development Committees report.

**Secretary:** Term Length: Two years

The Secretary records minutes during AWG's Board of Directors and Executive Committee meetings, and sees that they are disseminated to participants. She or he chairs the Membership (Services) Committee. The Career Development Committee reports to the Secretary, as does AWG's appointed Archivist.

**Editor:** Term Length: Two years

The Editor is responsible for AWG's newsletter, GAEA, and other AWG publications. She or he chairs the Publications Committee. The Field Trip Committee reports to the Editor, as do AWG's Publicist, Public Affairs Coordinator, and At-Large Correspondents.

**At-Large Delegate:** Term Length: Two Years

One At-Large Delegate position is open to an AWG member not affiliated with any chapter. AWG's three At-Large Delegates are responsible for representing AWG's at-large membership on the Board of Directors.

As AWG officers, the President Elect, Secretary, and Editor are expected to attend four meetings per year: the spring and fall meetings of AWG's Board of Directors, and two teleconferences. At-Large Delegates attend the two Board of Directors meetings. The costs of attending these meetings, except for limited travel expenses, are the responsibility of the officers. Camaraderie and networking are free!

If you are considering running for office, please feel free to ask about a position, its responsibilities, its time requirements, and other obligations to make sure it is what you expect and are willing to take on. To obtain more information regarding a position, or to submit candidate recommendations, please contact

Karen Kähler, Nominations Chair  
670A North Madison Ave.  
Pasadena, CA 91101-1110  
(818)796-5248  
sambhain@pacificnet.net

**Candidate recommendations must be received on or before April 30, 1997.**

### Editorial Notes, cont.

am writing here to express an issue which I strongly believe needs to be addressed. The human population is still growing exponentially, having more than doubled in the past 50 years, and another doubling lies ahead in another 50 years. I am concerned that social fears, political and economic expediency, adherence to ideas less relevant today than 200 or 2000 years ago, and a retreat from the obvious problems ahead are taking the place of awareness and caution which should be the dominant sensibility in the face of these numbers. While the focus of the geoscience community in support of education has necessarily been on the schools and the children in our population, the unspoken implication seems to be that parents and other adults

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Encourage  
Exchange  
Enhance



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## Editorial Notes, cont.

do not have need of this attention. I think nothing could be further from the truth. An event in Puget Sound recently highlighted this in tragic dimensions: a young family of four was killed when the steep slope behind their beach front home suddenly gave way, burying the family, and pushing the upper floor of the house completely off its moorings and into the Sound. This house and others along the base of the cliff had earlier been 'yellow tagged' for caution against potential slope failure due to the heavy snow and rain this winter. But in the face of inconvenience, expense, and lack of suitable knowledge of the real risks involved, residents returned to or remained in their fragile, vulnerable homes. There were many such slope failures around our region this winter, due in great measure, to undercutting, overbuilding, deforestation, and other alterations to natural slope conditions.

In spite of projected increases in earth science education offerings for them, I am concerned that children studying earth science in school will not take these types of problems seriously if they and the issues are not supported with knowledge and education at home and in the wider community. AGI's 1997 President Ed Roy recently stated, "Earth science education needs to begin in the early elementary-school years and to continue throughout professional careers. Precollege students should be exposed to the study of Earth as they become aware of the world around them and the issues that we face as humans living on this planet" (Roy, E. C. Jr., 1996, *Geotimes*). I agree, but would go further; I submit to the geoscience community that more than the educational institutions are in need of this encouragement from our members. Parents of these children, and other, older members of our society who have not had the advantage of formal earth science education at any level, are in dire need of knowledge of the tightly integrated systems of the planet we live on. I feel it is as important for us to share geoscience knowledge with the entire spectrum of human society, as it is to inform the educational processes in our schools. Since schools already have curricula, administrations, and infrastructures that can be expanded or enhanced toward earth science education, it is not as immediately obvious where to go or

how to proceed in an effort to expand earth science awareness outside structured education.

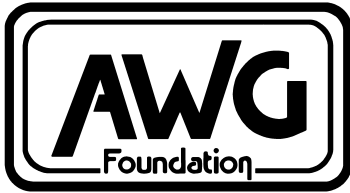
But I have an idea: In most communities there are many places where people congregate, such as libraries, community centers, senior citizen centers, school buildings after-hours, church halls, and outdoor outfitters (this is REI country after all!). There are many activities and types of training available to adults: we can learn to dance, knit, build, garden, parent, communicate, speak another language, cook, write, heal emotional wounds, etc. In some cases, mild versions of earth and nature-related events are also available. Both venues and personal growth-type activities are readily available in the larger cities, and to a lesser degree in more rural areas. Imagine now, that an enterprising, visionary mix of funding sources and support institutions contracts with geoscientists and professional educators around the country to produce a 'curriculum' of earth science education to be presented in the aforementioned venues! Topics of the earth, atmosphere, environmental, and space sciences could be taught at an undergraduate level in academic-type semester or quarter sequences, using standard and individually tailored texts and workbooks, and the unique features, resources, and field sites of each region. Administrative and teaching salary costs for the participants would be subsidized to keep costs minimal, in much the same way as the public programs mentioned above are administered through various public agencies. Books, special materials and field trip expenses could be born by participants. I believe there is a market that needs the services of the geoscience community, and I believe we have a product that must be made available.

This little essay was intended to stand on its own, and there was a little more yet to come. But tonight I have had the astonished pleasure of reading Dr. Eldridge Moore's eloquent and much more fulsome commentary on the identical theme in the most recent issue of *GSA Today* (Vol. 7, # 1, January, 1997). In his 1996 GSA Presidential Address, Dr. Moore writes about a crisis in the geosciences, one that had disrupted his intended Address. This crisis is really a series of issues concerning the geosciences, society in general, and the lack of a unified voice on the part of geoscientists. As solemn as this sounds, I

found myself grinning all over upon reading the following summation: "Manifestations of this crisis include: 1. There is very little knowledge of the geosciences among the public as a whole (as indicated above), although there seems to be a great hunger for knowledge on the part of many non-scientists." I couldn't read fast enough, anticipating his suggestions for action: "It is time for all of us in the geoscience community to get involved". At this precise point, # 3 on Dr. Moore's "WHAT TO DO?" list states, "Develop adult education classes in general geology and the relationship between geology and the problems facing society". # 4 goes further, to my heart like a benediction: "Offer field trips to local sites, wherever they might be. Explain to your audience that the landscape is there for a reason and tell them how it got there. Talk about geologic time." To complete Dr. Moore's trajectory, # 1 on his 'to do' list is to, "Get our message across to the rest of the science and policy communities; and # 2, "Get geoscience education in the schools, starting right down at the kindergarten level". AGI's GAP, with David Applegate at the helm, is working hard on # 1, GSA's SAGE, under Ed Geary is likewise working hard on # 2, and many other national and international geoscience organizations, including AWG, are contributing in bountiful measure to both these arenas. But, who speaks to # 3?

By now it is obvious that this is not a rhetorical question; I do seek an answer, and hope to contribute to that answer. However, for this writing I'm already facing the unpleasant possibility of bumping some worthwhile Gaea contribution so that this now lengthy piece can take its place. I encourage you to read Dr. Moore's excellent article, and perhaps may borrow from his expertise one last time, to quote, "Geoscience should become the central science of the 21st century! Let's get going!" Ideas and suggested actions to further these goals are welcome in these pages. Please, let us hear from you if you have concrete suggestions for how we can make the difference we must.

— Linda Schieber, AWG Editor, Puget Sound Chapter (1/30–2/4, 1997)



# Association for Women Geoscientists Foundation

## Focus: Scholarships

AWG members and Chapters have created several scholarships to encourage women and girls to study the geosciences. These scholarships are funded through the AWG Foundation:

### Nationwide:

**Chrysalis** - Chrysalis awards are given to women geoscientists who have had to interrupt their graduate studies to help them finish their degrees.

**Retraining** - Retraining Awards were set up to provide funds for women geoscientists to take training programs so they would be able to transfer their skills to another sector of the job market. Money is set aside for this program but it needs volunteers to get it going. Contact AWG Officers if you are interested.

### Regional:

Denver Chapter - Student Award  
Lone Star Chapter - Lone Star Scholarship  
Minnesota Chapter - Lehman Scholarship  
Potomac Chapter - Hanshaw Scholarship  
Potomac Chapter - Greenwood Scholarship  
Puget Sound Chapter - Puget Sound Scholarship  
San Francisco Chapter - Outstanding Student Award

**Scholarships provide valuable encouragement and much needed financial support to students.**

**You can support the scholarship of your choice by sending a donation to:**

**AWG Foundation  
c/o John Griffin – Treasurer  
8500 South 56<sup>th</sup> Street  
Lincoln, NE 68516-9380**

**Donations are tax deductible to the extent allowed by law. The AWG Foundation is always happy to consider proposals for new scholarships.**

## AGI Government Affairs Program (GAP) Update

— (excerpted from David Applegate's November and December Updates, 1996)

These monthly updates go out to members of the AGI GAP Advisory Committee as well as the leadership of AGI's member societies and other interested geoscientists as part of a continuing effort to improve communications between GAP and the geoscience community that we serve. If you would like to receive future updates by e-mail (our preferred method of distribution), please send a note to [govt@agiweb.org](mailto:govt@agiweb.org), and we will put you on the list.

This past year has been a time of growth for the program—an increase of over 50% in support from the member societies making it possible to hire a second full-time staff member. The year's highlights included the intersociety workshop on the USGS/NBS merger, the Washington workshop on geoscience data preservation, testimony before Congress on issues including geoscience appropriations and reauthorization of the National Geologic Mapping Act, the "Geology and Government" issue of Geotimes, and a greatly expanded Web site.

Goals for the coming year include early passage of the geologic mapping act, which passed the House last year and came within minutes of passage in the Senate, and a continued focus on funding for geoscience-related agencies and programs in an effort to cushion the blows that will inevitably come during the ongoing drive toward a balanced federal budget. We also plan to work with the land management agencies to address ways to improve the input of geoscience information into their decision-making. Natural hazards and environmental legislation will be introduced early in the new Congress, and AGI will seek to bring together community input into the drafting of such legislation. The program will also be developing its first-ever strategic plan, building on last year's AGI strategic plan.

**New Faces at Federal Agencies: Peña at Energy, Dombeck at Forest Service** On December 20th, President Clinton finished filling the vacancies in his Cabinet left by resignations. The major surprise was the selection of outgoing Transportation Secretary (and for-

mer Denver mayor) Federico Peña as Secretary of Energy, replacing Hazel O'Leary. Although Peña has no specific background in energy-related issues, one observer noted: "As transportation secretary, he is very familiar with the whole nexus between transportation, energy and the environment." As expected, Bruce Babbitt is officially staying on as Secretary of the Interior. Michael Dombeck, Acting Director of the Bureau of Land Management, has been named as head of the U.S. Forest Service, replacing Jack Ward Thomas. No word yet on Dombeck's successor at BLM.

**UN Delays Discussion of Database Treaty.** In November, AGI joined other scientific societies in expressing concern over a draft intellectual property rights treaty that could fundamentally change the accessibility of scientific databases. The treaty was to be finalized at a Geneva conference of the World Intellectual Property Organization (an arm of the United Nations) in early December. As a result of the concerns raised by scientists as well as many developing countries, the database treaty was not brought up for discussion at the conference, and no date was set for future discussions. Although designed to fight international piracy of copyrighted material, the treaty would protect virtually all compilations of data from copy or reuse with no "fair-use" exemption for scientists or educators, a change that could adversely affect scientists who rely on large international datasets. An Action Alert on this issue is available on GAP's homepage [www.agiweb.org](http://www.agiweb.org).

**NSF Proposes Changes to Merit Review Process, Holds Town Meeting.**

The National Science Board has released its recommendations for changing the merit review process used by the National Science Foundation to review the thousands of grant proposals received each year. The changes primarily center on a simplified set of questions that reviewers should address when rating proposals. NSF is accepting comments on the changes until January 15. Additional information is available from an AGI Action Alert on GAP's homepage [www.agiweb.org](http://www.agiweb.org) and directly from NSF at [www.nsf.gov](http://www.nsf.gov). Final changes will be announced this spring. The merit review changes were one of many issues discussed at a "town meeting" held by NSF's Geosciences Directorate at the AGU Fall Meeting in San

Francisco. Notes from the session, hosted by NSF Assistant Director Bob Corell, are available on GAP's home page. Minutes from an earlier town meeting at GSA's Annual Meeting in Denver are available directly from NSF [www.gro.nsf.gov](http://www.gro.nsf.gov).

**Meeting with U.S. Geological Survey on Topographic Maps.** GAP staff have been meeting with the USGS National Mapping Division (NMD) and Office of Outreach to discuss ways of improving communication in the wake of concerns within the geoscience community over the NMD's proposed changes to topographic map products. NMD recently developed a 14-page document entitled "Evolution of Topographic Mapping in the U.S. Geological Survey's National Mapping Division" that is available on the USGS home page [www.usgs.gov](http://www.usgs.gov) under "What's New".

**Meeting with U.S. Forest Service on Public Land Management.** GAP staff also met with Tom King, chief geologist at the U.S. Forest Service, to discuss ways that AGI and the geoscience community can become more involved in how geoscience is used (or not used) in forest management plans and ecosystem studies. GAP staff will also be meeting with the Bureau of Land Management for similar discussions. It is hoped that discussions can eventually lead to a workshop or other activities geared toward improving the scientific input that goes into public land management decisions.

**GAP Advisory Committee on the Web**

In order to improve communication with the program's advisory committee, we have created a home page for the committee [www.agiweb.org/agi/gapac/gapac.html](http://www.agiweb.org/agi/gapac/gapac.html) containing a committee roster, these monthly updates, and the minutes from the May and October committee meetings. The site is also accessible from the GAP home page [www.agiweb.org/agi/gaphome.html](http://www.agiweb.org/agi/gaphome.html) by clicking on the Capitol dome. We are very open to suggestions of additional information that would be useful for the committee site as well as for the GAP site as a whole.

**New Web Site and E-Mail Addresses**

The address for AGI's World Wide Web home page is [www.agiweb.org](http://www.agiweb.org), and the program's e-mail address is: [govt@agiweb.org](mailto:govt@agiweb.org).

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## At-Large Delegate News

As your At-Large Delegates, we would like to resurrect the At-Large Newsletter. In the past, items for the At-Large Newsletter were collected, formatted, and printed by the at-large delegates. In the last year or so, it was decided that at-large information could be published in the Member News or Chapter News in Gaea; however, despite the efforts of several individuals, there has been no at-large news submitted since last Fall. We would like to do everything possible to correct this situation, and provide a forum for at-large members to publish news about their careers and activities, discuss issues, and provide a sense of community otherwise found in AWG chapters.

This is a call to all at-large members to send your news, articles, suggestions, etc. to us via either e-mail, fax, or post. We need your help to make the At-Large Newsletter a success. We look forward to hearing from you in the near future.

Dr. Joanne Kluessendorf, Department of Geology, University of Illinois, 1301 W. Green Street, Urbana, IL 61801, phone (217) 367-5916, FAX (217) 244-4996, e-mail: [jkluesse@uiuc.edu](mailto:jkluesse@uiuc.edu)

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## Jan Tullis among the 1996 AGU Fellows

AGU has announced 32 distinguished scientists who were selected by a committee of their peers to be AGU Fellows in 1996. This selection was based on the individuals' attainment of acknowledged eminence in a branch of geophysics.

AWG member Jan Tullis was among the women so chosen; Jan has performed pioneering research on the deformation behavior of crustal rocks and its application to understanding deformation processes in the Earth. Other women recognized by AGU for pioneering work include Lisa Tauxe, Anny Cazenave, Sallie W. Chisholm and Inez Fung.

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## Mei Mei Wang Heads Earthquake Hazard Activities

Yumei (Mei Mei) Wang, an AWG Puget Sound Chapter member, has been appointed to lead the earthquake hazard activities for the Oregon Department of Geology and Mineral Industries (DOGAMI). Mei Mei has been an earthquake engineer with DOGAMI since 1994, and now will be leading a team of geologists and scientists who specialize in studying earthquake hazards in Oregon. She will also work with local, state and national earthquake groups in forming partnerships for mitigation efforts to reduce loss of life and property.

Mei Mei recently authored the earthquake hazard maps for the Salem, OR, area (DOGAMI Geological Map Series GMS-105, 1996). She and other scientists are now working on similar maps for the Eugene-Springfield, OR, area. The hazard maps are part of a larger project to protect Oregonians from earthquake damage. Through Mei Mei and other earthquake professionals, DOGAMI is increasing its efforts to promote earthquake awareness and preparedness.

Mei Mei earned her MS in civil engineering with a geotechnical emphasis from UC Berkeley in 1988. She had her own geotechnical engineering consulting firm in Oakland, CA, before coming to DOGAMI. She is an officer for the American Society of Civil Engineers and a member of the Earthquake Engineering Research Institute, AWG, and AEG. She is chairperson for AEG's 1997 earthquake symposium.

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## AWG Breakfast — North-Central Section GSA

An AWG breakfast is scheduled for Friday, May 2 at the North-Central Section GSA meeting in Madison, Wisconsin. If you plan on attending the sectional meeting and are interested in joining us please notify Sarah Stoll: [sjstoll@aol.com](mailto:sjstoll@aol.com); 414-452-7321; or 2013 N 7th St., Sheboygan, WI 53081. This is not a firm commitment, but it will help us plan the event. Thanks...Sarah

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## Member News

Congratulations to **Michele Kinaan**, of the Los Angeles Chapter on her decisive win in the U. S. Open Raquetball Championships in November. This victory places her as the top ranked woman raquetball player in the nation. The re-broadcast of the tournament will be shown on ESPN in early 1997. South Florida Chapter member **Dianne McCommons Beck** participated in the Hardee County Outdoor Classroom at Paynes Creek State Historic Site last fall. She spoke to Hardee County middle school students about ecosystem management, water quality, and how activities in a watershed can effect water quality far downstream.

Corporate member **Jim Reed**, of Rockware, Inc. and the Denver Chapter, has been keeping himself close to practical field geology by exploring the forensic uses of geophysics (gas chromatography, remote sensing, etc.). He is a member of Necrosearch, a group which takes an interdisciplinary approach to the discovery and recovery of remains and evidence. For more information about Jim's hobby, see *Field Notes: Hide and Go Seek*, an article about Jim and his like-minded friends in the December 1996 issue of *Outside* magazine, pages 41-48. The article's description of Jim reads like this; "Jim Reed, a quick-witted geologist who owns a software company and functions as the group's practical joker..." I shudder to think what jokes Jim could come up with under such circumstances.



**Please see the accompanying insert for information about AWG's upcoming 20th anniversary conference: "Perspectives"**

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## The California Council Of Geoscience Organizations

### California Geologists Enter a New Era in Public Interest Activities

— by Robert E. Tepel

In January 1997, representatives from leading California-based geoscience organizations met in San Jose to discuss ways to bring geologic considerations to the front burner in two separate, but linked, arenas. First, the world of legislation and regulation requires a lot of work that gives employment to many geologists, but the laws and regulations requiring the work are often so poorly focused that they cause wasteful expenditures for clients, businesses, and taxpayers. Worse, needed geology-based legislation and regulations that would save lives and dollars have long been ignored. Earthquake safety measures routinely recommended by blue-ribbon panels after major earthquakes are a prime example of good ideas quickly forgotten. Hydrogeologists will be quick to point out that the vexatious problem of water well log confidentiality continues to make their work harder and more costly. Second, our business opportunities and professional practice conditions are under constant scrutiny, not only by the Department of Consumer Affairs, but by other parts of the administration and by legislators, public interest groups, and other professional/business coalitions. In both arenas, California geologists have almost made it a tradition to abstain from participation at State and local levels, either in the public interest or in the profession's interest. Architects, engineers, accountants, real estate brokers, and farmers have formed coalitions to advance their interests in Sacramento and to contribute their expertise. But not geologists. Now that may change if the California Council of Geoscience Organizations (CCGO) gets off the ground.

The organizing meeting was attended by representatives of these state-wide and local organizations: American Institute of Professional Geologists, Groundwater Resources Association of California, Northern California Geological Society, Inland Geological Society, the Association for Women Geoscientists, and

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## Woman's Place

### Geologist Florence Bascom at Bryn Mawr; a 100th anniversary

The geology department at Bryn Mawr College celebrates its 100th anniversary this year. Founded in 1896, the department owes its birth to Florence Bascom, who was instrumental in changing the face of the geological profession and American higher education. Though not the first woman to earn a Ph.D. in geology from an American University (this achievement, in paleontology, was attained by Mary Emilee Holmes, at the University of Michigan, in 1887) Bascom won national attention in 1893 when she earned her Ph.D from Johns Hopkins University. When she first entered Johns Hopkins, Bascom was told that she could take courses but couldn't earn a degree; she had to sit behind a screen in the classroom so that her presence would not disturb the men. Her work earned her the degree however, and led her to teach the first geology course at Bryn Mawr.

Founded in 1885, Bryn Mawr offered many nontraditional majors to its female students, and when a group of chemistry majors petitioned the administration to offer a course in geology, Florence Bascom, a young geologist from Wisconsin was offered the job. Once at Bryn Mawr, Bascom faced the same hurdles that the heads of many geology departments face today; the president strongly opposed a separate geology department and geology was integrated with the more established departments such as biology and chemistry. For three years Bascom taught within these departments before her threatened resignation convinced the administration to create an independent geology department. In 1904, Bascom sent Bryn Mawr's first geology graduates out into the world to help shape a new century.

Florence Bascom's career as a geologist was not limited to academia; in 1896 she was the first woman to join the USGS as an assistant geologist and was quickly promoted to geologist. The first woman to be recognized as a professional in this field, she successfully mapped 23 15-minute quadrangles in the Mid-Atlantic Piedmont area, and her work in this area remains the primary source of geological information even today.

Her pioneering efforts at Bryn Mawr left behind a well-established depart-

ment with a curriculum still focused on classical geology, though now augmented by an Environmental Sciences concentration. Some of the department's well-known graduates include: Anna Jonas (Stose) and Julia Gardner, both of the USGS; Rhea Graham, former director of the US Bureau of Mines; Priscilla Grew, former state geologist of Minnesota and vice chancellor for research at the University of Nebraska-Lincoln; Elizabeth Armstrong Wood, educator and crystallographer at Bell Labs; and Maria Luisa Crawford, Bryn Mawr faculty member, MacArthur Fellow, and first recipient of AWG's Distinguished Educator Award.

— Excerpted from a longer article, "A Woman's Place", by China Williams, *GEOTIMES*, November, 1996, p. 12-14. Used with permission from the American Geological Institute.

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## AWG Outstanding Educator Named To 1997-1998 JOI/USSAC Distinguished Lecturer Series

Peggy Delaney has recently been named as one of six Distinguished Lecturers for 1997-98 by the JOI/USSAC Distinguished Lecturer Series. The title of her talk is, "Nutrients and Ocean History: A focus on Phosphorus." The goal of the Distinguished Lecturer series is to bring the results of Ocean Drilling Program research to students at both the undergraduate and graduate levels and to the earth sciences community in general. There will be a flyer available January, 1997. Applications will be accepted from U.S. institutions (colleges, universities, and nonprofit organizations) interested in hosting a talk by one of the six lecturers for 1997-98. To receive an application, contact the JOI/USSAC Distinguished Lecturer Series, 1755 Massachusetts Avenue, NW, Suite 800, Washington, D.C. 20036-2102, telephone (202) 232-3900, fax (202) 232-8203, e-mail: [joi@brook.edu](mailto:joi@brook.edu).

Peggy Delaney was AWG's Outstanding Educator Award recipient in 1993. She is currently Professor of Ocean Sciences at the University of California in Santa Cruz, and is editor of *Paleoceanography*.

## CCGO, cont.

the three California Sections of the Association of Engineering Geologists. Governance and finance issues were discussed, and bylaws are being drawn. A Mission Statement was adopted: The California Council of Geoscience Organizations advocates the use of sound geological knowledge and practice in proposing, reviewing, and monitoring statutes, regulations, and public policies. The initial concept for the Council is that membership will be open only to geoscience organizations and businesses. In one governance plan under consideration, the Council would be controlled by a Board of Directors appointed by the member organizations for staggered three-year terms. An Executive Director, and possibly a lobbyist, would be retained initially on a part-time basis.

In general, geologists either don't like to, or don't have the time to, get involved in politics, either in the public interest or in the interest of their profession, although we all realize the many benefits that our work confers on society, and we all know that there are many more steps that could be taken. Frank McClure, former U.S. Senator from Idaho, in addressing a group of scientists and engineers, said, "If you don't like politics and don't get involved in politics, you will be governed by those who do." Through CCGO, California geoscientists may now be taking their political destiny into their own hands and heading down the activist trail. If done with true professional dedication, this will benefit the profession, our colleagues in related fields, and the public. By allowing California's geoscience groups to build consensus under a common banner, CCGO has the potential to add to the power and expand the mission of every organization that joins it without taking anything from the independence or power of its member organizations.

For information about CCGO's next meeting, contact Betsy Mathieson at Teratech (voice) 408-297-6969, (fax) 408-297-7716, or home e-mail:

**BMathieson@aol.com**. Interim contact on other CCGO issues: Robert E. Tepel, 767 Lemonwood Court., San Jose CA 95120, Phone eves/weekends: 408-997-3437, home fax 408-997-6932.

## Chapman Conference

### CSEDI/JOI/USSSP Conference on The History and Dynamics of Global Plate Motions

To be held June 17-22, 1997; Marconi Conference Center, Point Reyes National Seashore, Marshall, California

#### CONVENERS:

Mark Richards, University of California, Berkeley, David Bercovici, University of Hawaii, Mike Coffin, University of Texas, Michael Gurnis, California Institute of Technology, Richard Gordon, Rice University, Larry Lawver, University of Texas, Richard O'Connell, Harvard University, Joann Stock, California Institute of Technology

#### CONFERENCE SCOPE

Advances in geodynamic modeling and seismic imaging of the Earth's interior now offer many possibilities for integrating our knowledge of the history of plate motions with our emerging understanding of mantle dynamics. The purpose of this conference is to bring together the plate reconstruction and mantle dynamics communities in order to foster innovative cross-disciplinary science, better integrate the geologic record of plate motions into geodynamic models, and bring a higher level of maturity to geodynamic models of the forces acting on plates. Topics of discussion will include:

- Dynamic models for plate motions
- Advances in mapping Phanerozoic plate motions: Plate boundary forces and fault systems
- Rapid plate motion changes
- The nature of the hotspot reference frame: Seismic imaging of subducted plates
- Integration of plate motion data and geophysical models

#### CONFERENCE FORMAT

Keynote addresses, poster sessions, formal and informal discussions, tutorial sessions to help the plate reconstruction and geodynamics communities understand the nuts-and-bolts of each others' work, and a field trip will be conducted to view the famous Franciscan and Salinian geology of both sides of the San Andreas Fault. The field trip will occur in the middle of the conference to encourage interactions among participants.

— continued in next column

## Michigan State University Sponsors Longest Running High School Honors Science Program

The High School Honors Science Program is a national, seven-week research program for rising 11th and 12th grade students on the Michigan State University campus. This is the oldest, continuously running program of its kind in the US (since 1958), and my objective is to provide 28 participants (women and minority students in particular) with a solid scientific experience in a supportive atmosphere while providing them with opportunities to discuss issues such as gender and race, career choices, the social and political context of the scientific enterprises, etc. Scholarships will be available based on need. If you know someone who might be interested, I would appreciate your passing this information along to them. If they would like information and wish to send along their home address, I will send application and related program materials in response. Deadline for receipt of applications is April 1. My address is:

Gail Richmond  
330 Erickson Hall  
Michigan State University  
East Lansing, MI 48824  
517/355-1725  
[gailr@msu.edu](mailto:gailr@msu.edu)

## Chapman Conference, cont.

### TRAVEL SUPPORT

Funding is available to provide partial support for students and foreign travelers. Application forms for travel support can be obtained from the address listed below. The deadline for receipt of travel applications is March 3, 1997.

### ABSTRACT DEADLINE: 3/3/97

A camera-ready original and two copies of all abstracts must be submitted in standard AGU abstract format.

### PREREGISTRATION: 5/5/97

Complete information is available from:

AGU Plate Motions Conference  
2000 Florida Avenue, NW  
Washington, DC 20009  
Phone: (202) 462-6900  
Fax: (202) 328-0566

E-mail: [meetinginfo@kosmos.agu.org](mailto:meetinginfo@kosmos.agu.org)

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## 98-99 Fulbright Awards For U.S. Faculty And Professionals

Opportunities for lecturing or advanced research in over 135 countries are available to college and university faculty and professionals outside academe. U. S. citizenship and the Ph.D. or comparable professional qualifications are required. For lecturing awards, university or college teaching experience is expected. Foreign language skills are needed for some countries, but most lecturing assignments are in English.

The deadline for lecturing or research grants for 1998-99 is **AUGUST 1, 1997**. Other deadlines are in place for special programs: distinguished Fulbright chairs in Western Europe and Canada (May 1) and Fulbright seminars for international education and academic administrators (November 1).

Contact the USIA Fulbright Senior Scholar Program, Council for International Exchange of Scholars, 3007 Tilled Street, NW, Suite 5M, Box GNEWS, Washington, DC 20008-3009. Telephone: 202/686-7877. WWW: <http://www.cies.org>. Email: [cies1@ciesnet.cies.org](mailto:cies1@ciesnet.cies.org) (requests for mailing of application materials only).

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## Volcano Quarterly Goes Electronic

Volcano Quarterly will begin publishing next month from their home page at <http://members.aol.com/vqjantan>.

Volcano Quarterly is an interest magazine which welcomes contributions about "volcanoes and the people who love them". Contributions should be in English, non-pornographic, and non-libelous. Graphics should be .gif, .bmp, .wmf, or Corel Draw 4.0 or earlier. Print subscriptions will still exist, at \$28 to US addresses, \$30 to Canada and Mexico, and \$34 elsewhere on this planet.

They will maintain links to volcano observatories, the Smithsonian GVN, and Volcano World sites on an exchange basis.

If you have any questions, contact the editors: [jnelle@aol.com](mailto:jnelle@aol.com) or [vqjantan@aol.com](mailto:vqjantan@aol.com).

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## Economic Geology In Russia

The 3rd Scientific Students' School presents *The Metallogeny Of The Ancient And Modern Oceans; Ore-Forming Processes* at the Institute of Mineralogy, Urals Branch of Russian Academy of Sciences 456301 Miass, Chelyabinsk District, Russia.

The purpose of the School is to form creative relations between students from high educational establishments in Russia and other countries, in areas of metallogenic analysis of paleoceanic structures by using achievements in marine geology and plate tectonics.

Students from the Higher Educational Establishments of Voronezh, Ekaterinburg, Irkutsk, Krasnoyarsk, Makhach-Kala, Moscow, Novosibirsk, Novocherkassk, Petrozavodsk, Rostov, St. Petersburg, Saratov, Syktyvkar, Tomsk, Tyumen, Ufa will be invited to participate in the School.

There are already preliminary arrangements for participation in the School for 1997 for students from educational establishments in the following countries: the Ukraine (Kharkov and Donetsk Universities), Uzbekistan (Tashkent University), China (Chinese Academy of geological sciences), Japan (Hiroshima University), Great Britain (Wales University), France (Centre of marine researches in Brest), and the USA (University of Honolulu).

There is a preliminary agreement with leading Russian experts in areas of metallogeny of the modern and ancient oceans, who will be invited for lecturing. Besides, Professor Alexandr Malahoff from the University of Honolulu agrees to acquaint the School's participants with the results of the study processes of hydrothermal ore-forming in rifts and continental margins of the Pacific by American expeditions. The materials of the School's 1997 class, including experts' reports and students' theses will be published.

For further information, information on 1995 and 1996 programs, and for registration forms, please contact:

Dr. Elizaveta Zaykova, Institute of Mineralogy, 456301 Miass, Chelyabinsk District, Russia. Fax: (35135)50286; e-mail addresses: [imin@ural.telecom.chel.su](mailto:imin@ural.telecom.chel.su) or [liza@imin.urc.ac.ru](mailto:liza@imin.urc.ac.ru) or [zaykov@imin.urc.ac.ru](mailto:zaykov@imin.urc.ac.ru)

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## Classified Ads

### Research for Undergraduates: Field and Geochemical Studies into Origins of Blue Ridge Mafic/Ultramafic Complexes

Interested undergraduate students are invited to participate in a collaborative research program involving field mapping and structural and geochemical analysis of intriguing mafic/ultramafic rock associations in the Buck Creek area of the Blue Ridge Mountains, western North Carolina. Students will address questions about the origins and evolution of the mafic/ultramafic complex and the surrounding high-grade metamorphic rocks of the Southern Appalachians.

This 8 week summer program, beginning June 8, 1997, includes 3 weeks of field mapping, sample collection and related activities using facilities at Western Carolina Univ., followed by 5 weeks of laboratory work and data interpretation using analytical facilities at the Univ. of South Florida. Individual and collaborative research results will be presented at the 1998 GSA Southeastern Section spring meeting.

Students will gain experience in the geologic mapping of a complex metamorphic terrane, digital map and data compilation, and procedures for the preparation and chemical analysis of rock samples using a Direct Current Plasma Emission Spectrometer. Participants will receive a \$300/week stipend during the summer program, plus room, board and travel expenses.

Students should have Junior standing and be Geology majors, or have an extensive Earth Science background; and at least a 3.0 GPA. Coursework in igneous and metamorphic geology and structural geology are recommended. Applicants should send a letter of interest, resume, an official transcript, and the name and contact information of a willing faculty mentor at their home institution to Dr. Jeff Ryan, Dept. of Geology, Univ. of South Florida, Tampa, FL 33620, or Dr. Ginny Peterson, Dept. of Geosciences, Western Carolina Univ., Cullowhee, NC 28723-9047. In addition, students should solicit letters of recommendation from 2 faculty members. Please contact Dr. Ryan (813-974-1598; [ryan@chuma.cas.usf.edu](mailto:ryan@chuma.cas.usf.edu)) or Dr. Peterson (704-227-7268; [peterson@wcu.edu](mailto:peterson@wcu.edu)) for more information. Decisions on participants will be made after March 31, 1997.

## **RESEARCH EXPERIENCE FOR UNDERGRADUATES IN GEOLOGY/HYDROLOGY BATES COLLEGE, LEWISTON, MAINE AND UNAM, MEXICO CITY AND ZIMAPAN, MEXICO**

**June 15 - July 26, 1997**

The Zimapan Mining District in Hidalgo, Mexico (about 400 km. north-east of Mexico City) has been the site of active mining and smelting activity since the early 1600's. In April, 1993, Aurora Armienta, Ramiro Rodriguez and others at the Geophysics Institute at UNAM found that twenty two of fifty ground water samples were contaminated with arsenic (concentrations greater than 0.028 mg/L), nineteen of them with concentrations greater than the drinking water limit (0.050 mg/L). This is an international collaborative project. Lois Ongley, Alison Lathrop, Helen Mango of the United States and Aurora Armienta, Guadalupe Villasenor, and Ramiro Rodriguez of Mexico will work with 12 students on various aspects of the arsenic contamination of the Zimapan valley.

Team REU '97, after training and beginning rock/water interaction experiments in Maine, will map and sample the rocks, water, and soils of the Zimapan valley. Last summer we verified the extent and magnitude of the arsenic contamination and mapped the area around the well with the highest As concentration (Cerro El Muhi). This year we will focus on four activities:

- 1) mapping El Baron neighborhood near Detzani, a well with high As concentrations,
- 2) mapping structure and stratigraphy of the upper San Juan watershed, and
- 3) beginning an analysis of the soils of the urban area. After returning to Maine, students will be able to use sophisticated equipment (SEM/EDX and ICP) for mineral, water, and whole rock analyses. The students will present the preliminary results of their work orally at the end of the REU. At that time students will propose a study to continue at their home institution the following academic year. Students may take data and/or samples back to their home institution for detailed investigation. Then, they will also be able to present a poster at a regional GSA meetings.

Some general geologic references about the area include: Garcia, G. G. and F. S. Querol (1991) Description of Some Deposits in the Zimapan District, Hidalgo. *The Geology of North America: Economic Geology, Mexico*. Boulder, CO, U.S.A., The Geological Society of America, Inc. 295 - 313; Moran-Zenteno, D. (translated by Wilson, JL and Sanchez-Barreda LA), 1994, *Geology of the Mexican Republic*, American Association of Petroleum Geologists, AAPG Studies in Geology #39, 160 pp; Simons, S. F. and V. E. Mapes (1956). *Geology and Ore deposits of the Zimapan Mining District, State of Hidalgo, Mexico*. U. S. Geological Survey Prof. Paper 284; Suter M., et al., 1995, *The Aljibes half-graben...*, GSA Bulletin, 107, 6, 627-641. A www site is currently under development to provide further specific information.

There is no application form. Students wishing to apply must be United States citizens or permanent residents majoring in Geology or a closely related discipline and should send the following information to REU in Hydrology, c/o Secretarial Services, Lane Hall, Andrews Road, Bates College, Lewiston, ME 04240 to be received by March 26, 1997.

- 1) name and address, college or university affiliation, major, official transcripts and list of courses in progress, anticipated graduation date, level of proficiency in Spanish (none required for participation but language skills are a definite plus);
- 2) a statement of interest in the project (1-2 pages) which should include your major, your hopes and expectations for the summer;
- 3) a faculty recommendation that addresses opportunities at your institution for any independent project described in your letter and a statement of support indicating the extent to which a faculty member could work with the student during the subsequent year. Strong faculty support for independent work in '97-'98 is a key factor. We expect that the REU will be able to provide some financial support.

Participants will be awarded a stipend of \$1800. The REU will pay for travel expenses in Mexico. Bates College will provide inexpensive lodging. Each participant is expected to provide for their own health care needs while in Maine. Some money has also been budgeted for short term health insurance in Mexico and child care. Please state your needs for funds for those purposes (this will not affect your application).

For further information contact:

**Dr. Lois K. Ongley, Dept. of Geology.**  
**Bates College, 44 Campus Ave., Lewiston, ME 04240.**  
**Internet: longley@abacus.bates.edu.**  
**Phone: (207) 786-6154.**  
**Fax: (207) 786-8334.**

This is pending funding from the National Science Foundation.

Email will probably be the best communication mode for queries, however, DO NOT apply by Email, your application might get lost.



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*Heads turn when AWG is on the scene.  
(l-r, Marcia Knadle, Imelda Cragin, and  
Kata McCarville)*



*Recipients of AWG's Outstanding Educator Award. l-r:  
Mary Savina (1995), Peggy Delaney (1993), Charlotte Schreiber (1994),  
Linda Abriola (1996), Maria Luisa (Weecha) Crawford (1988)*