

Scientific Utopia: The Gordon Research Conferences

By Randy Wedin

Chemist Neil Gordon never dreamed that a small gathering of researchers at Johns Hopkins University in 1931 would grow into the utopia of scientific conferences. Gordon Research Conferences carry enormous benefits for attendees and for science. Contrary to widespread belief, getting an invitation often is no more complicated than applying for one.



A chemist's enduring invention: The first meeting of what became the Gordon Research Conferences took place in 1931 at Johns Hopkins University in Baltimore. Neil E. Gordon, a chemistry professor at Hopkins, convened the first session and became the namesake of this utopia of scientific conferences.

Imagine a scientific conference where Nobel laureates mingle with graduate students, research leaders from industry and academe talk shop, and scientists speak freely about experimental results before they've been published.

Imagine a scientific conference where laughter and vigorous discussion can be heard on tennis courts, around dinner tables, and on hiking trails. Imagine a scientific conference where the banquet on the final evening includes lobster dinner, magic shows, and dancing.

Sounds like utopia, you say?

Well, it's not.

This is just your typical Gordon Research Conference (GRC). The GRCs attract thousands of scientists each year with exactly this type of meeting. In 2001, for example, more than 18,000 scientists attended one of the 162 different GRCs, on topics ranging from adhesion to zeolites.

Ask scientists why they return year after year to a particular GRC, and they often talk about research collaborations that emerged over a dinner conversation. Or they might talk about how they always come home with several new research ideas, a couple of great leads on funding sources, and maybe even a job offer. Scientists often realize that the most important events in their professional lives have taken place at a GRC.

Of course, there is another side to the GRCs that you'll hear about less frequently, at least in print. There are the iguanas mischievously left in bathtubs and beds. There are the midnight raids on cafeteria kitchens. There is the story about a group of skinny-dipping scientists who frolicked in a chilly Pacific Ocean at 3 a.m.—and had their clothes stolen from the beach by a colleague.

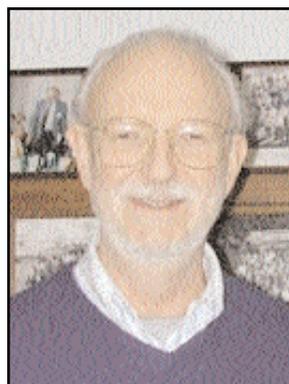
In keeping with GRC rules prohibiting the publication of discussions, results, and data presented at conferences, no further details about these notorious incidents will be found in this article. Keep reading, however, if you want to learn more about the history of the GRCs, the personal and scientific benefits they offer, and how to apply for and attend one.



Dagmar Ringe



Michael Maroney



Carlyle B. Storm

A CHEMIST'S INVENTION

The first GRC was held in 1931 in Remsen Hall, the chemistry building at Johns Hopkins University, in Baltimore, MD. The brainchild of chemist Neil Gordon, the conferences were designed to bring together scientists in an atmosphere that encouraged the sharing of ideas, results, and camaraderie. Conference topics in the early years included “Heavy Hydrogen”, “Long-Chain Molecules”, and “X-Rays and Crystal Structures”.

After the success of the first several conferences held on campus, Gordon wanted an environment that was more secluded and relaxed. He found that ambience on Gibson Island, a summer resort community in the Chesapeake Bay. The conferences soon became known as the Gibson Island Conferences and also as the AAAS–Gibson Island Conferences during the formative period of 1934–1944. AAAS is the American Association for the Advancement of Science.

By the mid-1940s, conference leaders needed a new venue and turned to colleges and private schools in the New England area, where the conferees could have the whole facility to themselves. The conferences moved to Colby Junior College (now Colby–Sawyer College) in New Hampshire in 1947. As the conferences grew in the post-World War II flurry of scientific research, two more New Hampshire sites were added in 1950 and 1954. Throughout the 1960s and 1970s, the number of conferences continued to grow, and other sites were added in New England and on the West Coast.

Originally organized as summer conferences, the GRC program now includes conferences throughout the year, with approximately 30 winter conferences held in Ventura, CA, during January, February, and March. In 1990, the GRCs expanded across the Atlantic Ocean, first to Italy (spring conferences) and then to the United Kingdom (fall conferences). In 1994, the GRC program crossed the Pacific Ocean as well; conferences have been held in recent years in Japan and Hong Kong.

Starting from just several conferences a year more than 70 years ago, the program has grown dramatically in size and content. No longer devoted only to topics in chemistry, the GRC mission embraces “frontier research in the biological, chemical, and physical sciences, and their related technologies.” Recently added conferences focus on topics such as “CAE in Polymer Processing”, “Environmental Endocrine Disruptors”, and “Green Chemistry”.

MAGIC FORMULA: FORMAT, FORMAT, FORMAT

While the scientific content, the venues, and the conference calendars have changed and evolved over the years, the purpose and format of the conferences remain the same.

“GRC offers an open forum for scientists to meet and discuss the frontiers of basic research and technology,” said Carlyle Storm (ACS '62), a chemist who has directed the GRC program since retiring from Los Alamos National Laboratory in 1993. “The meetings are very flexible so that the latest innovations and ideas can be presented and debated. The discussions help set the research agenda in a particular area for the next 5–10 years.”

Faced with such a lofty mission, how do conference organizers make it happen?

According to most attendees, the real secret of success is the GRC format, including the following key elements:

- Secluded locations eliminate the normal distractions of a convention city and encourage participants to stay for the entire meeting.
- Cost-effective accommodations (often in a dormitory setting) allow a wide range of scientists to attend.
- Conferences are run by the leaders in the field. “GRC is a ‘bottom-up’, scientist-driven organization,” Storm explained. “The conference chairs are responsible for the content. Those of us on the GRC staff think of ourselves as the ‘innkeepers’.”
- Conference attendees are prohibited from quoting results and data presented at conferences. No meeting abstracts or summaries are published. As a result, scientists feel free to share their results, theories, and speculations at an earlier stage of the research process. “People get the latest results in real time and don’t have to wait many months for the publications to appear,” said Storm. “You can look at it as intimate peer review with immediate feedback.”
- Afternoons are left open for socializing, recreation, and informal discussions.
- Organizers make a strong effort to encourage attendees from various research settings



On the 2002 agenda: The Gordon Research Conferences Web site at www.grc.uri.edu provides a wealth of information, ranging from conference schedules, to online application procedures, to procedures for proposing a new conference.

(e.g., industry, government, and academe), from around the world, and from various career stages (e.g., from grad student and postdoc to senior scientist). “We try to mirror the profession,” Storm pointed out.

Conferences also are kept small, with an average conference size some years being 112 attendees, and focus on a narrow topic at the frontier of research.

ON THE HORIZONS OF SCIENCE

One of their most important features is a sharp, abiding focus on trends and new horizons as the scientific enterprise rolls ahead. Arthur Ellis, professor of chemistry at the University of Wisconsin–Madison and director of the chemistry division at the National Science Foundation (NSF), said the conferences are a beacon for policy makers as well as researchers.

“NSF program officers follow the establishment of new GRCs as a way to spot trends and see where fields are going,” he said. As an area of research interest gathers momentum and attracts a growing cadre of researchers, it may reach the stage where a GRC is warranted. A group of scientists can propose it as a new topic, and the GRC leader-

ship will review the proposal. As many as 10–15 new conferences are added each year.

Just as new fields of research interest emerge, others fade away. “We evaluate the meetings each time they meet,” said Storm. “If they are not at the frontier of their field, we do not schedule them for future sessions.” In recent years, 5–10 conferences have been discontinued annually.

Sometimes, a GRC will evolve by changing its name and focus as the science and technology evolve. For example, the current GRC on “Enzymes, Coenzymes, and Metabolic Pathways” can trace its lineage back to the “Vitamins” conference, first held in 1935.

AFTERNOONS ARE FREE

What about those free afternoons, which attendees consider a secret of the GRC success? The morning and evening scientific sessions provide an opportunity for all conference participants to meet to present and discuss results. In the afternoons, conference participants can meet informally, take advantage of recreational opportunities, and continue discussions in a relaxed setting.

Each conference tends to develop its own afternoon traditions. The “Natural Products” conference, for example, holds an Academic vs. Industry softball game on the Thursday afternoon of each annual conference. Conference participants begin bantering about the game as soon as they arrive, reliving past glories and placing side-bets. This good-natured jousting continues throughout the week until the Thursday evening banquet, when the losing coach presents “The Plaque” and the accompanying bragging rights to the victorious team.

Sports and activities popular at other conferences include soccer, volleyball, birding, basketball, canoeing, swimming, hiking, and sailing. For some scientists, a GRC may be the first time they’ve tried some of these activities in many years. Storm reports that usually several visits to local emergency rooms are made each summer as scientists attempt, unsuccessfully, to make their bodies move with as much youthful agility as their minds.

Greg Petsko (ACS ’79), professor of biochemistry and chemistry protein crystallography at Brandeis University, is a veteran GRC conferee. He offered this tongue-in-cheek advice to new attendees in the June 2, 2000, edition of *Science*:

“Don’t try to recapture the glories of your lost athletic youth. Don’t play basketball or volleyball in the afternoons; you’ll pull something that’s best left unpulled. Don’t go canoeing. Rent the video of *Titanic*, and you’ll understand why. Don’t climb one of the mountains without oxygen and a team of Sherpas. Spend the afternoons hiding in the lecture hall; it’s usually air-conditioned, and it’s the last place they’ll look for you.”

BENEFITS TO SCIENCE AND SCIENTISTS

Because the GRCs focus on areas of frontier research, they can be highly interdisciplinary. Michael Maroney (ACS '78), professor of inorganic chemistry at the University of Massachusetts, Amherst, regularly attends the "Metals in Biology" conference. Said Maroney: "There's a wide range of scientists from biology, nutrition, and medicine, as well as chemistry. Our disciplines aren't the same, but our research interests are. This is extremely valuable and helps me think about things differently."

Many participants value the GRC prohibition on publishing results presented at a meeting. "There are no abstracts or articles," said Dagmar Ringe (ACS '99), professor of biochemistry and chemistry at Brandeis and a member of the GRC Board of Trustees. "As a consequence, one hears things that are pre-publication. Speakers are encouraged to present material that has not been published yet—material that is controversial, material that is perhaps not entirely proven and is still therefore at the developmental stage. From the point of view of the speakers, they can get feedback. From the point of view of the audience, they can begin to think about whether it's worthwhile going in those directions. The benefit is that you get to discuss things that are really cutting-edge."

NSF's Ellis pointed out the value of the GRCs as a professional development experience that helps young scientists integrate into the community. After a recent conference on "Hormonal Carcinogenesis", an assistant professor commented, "As a young faculty member, I greatly benefited from being allowed to orally present my poster and having the opportunity to meet many senior scientists in my field. I was greatly energized by the excitement everyone felt and the ease that science could be discussed in an open forum. I left with many new contacts and several collaborations."

Senior scientists benefit from GRCs just as much as junior scientists, and they return year after year. "Of the nine 2001 Nobel laureates, seven have been regular GRC participants in recent years," GRC Director Storm pointed out.

SPIN-OFFS AND IMITATORS

The GRC format has been so successful that other organizations have used it as a model for their conferences. In 1962, the United Engineering Foundation started a series of GRC-type conferences in engineering, holding 23 in 2002. When the Federation of American Societies for Experimental Biology established its Summer Research Conference program in 1982, Alex Cruickshank (ACS '49) (GRC director, 1968–1993 and director emeritus, 1993–present) served as program adviser.

The GRC program has also created its own set of spin-off programs. A series of Gordon Science Education and Policy Conferences was launched in 1992. In June 2002, for example, a conference on "Innovations in College Chemistry Teaching" included sessions on topics such as "Teaching Chemistry in a Real World Context", "What Can We Learn from Other Disciplines?", and "Teaching a Diverse Population". An additional GRC program is the Gordon–Kenan Summer School Program, with two-week summer school sessions on "Chemical Physics" and "Risk Analysis".

HOW TO ATTEND A CONFERENCE

If you're considering attending a GRC, visit www.grc.org for a schedule of upcoming events, Storm advised. Indicate your interest in attending a specific conference by filling out a form on the Web site. The names of those interested in attending are forwarded to the conference chair, who makes the final decisions about who will receive an invitation to attend.

GRC staff said the conferences' popularity has engendered myths that it is impossibly difficult to get an invitation. True enough, some conferences receive more applications than can be accommodated. However, for two-thirds of the conferences, nearly all qualified scientists (i.e., those active in a particular field) will receive an invitation.

Once you've been accepted, consider tips from veteran attendees.

"Sit down at a table at dinner and introduce yourself," Storm suggested. "The senior people at the table will be delighted to see you and will probably ask you what you are doing."

"It's a great opportunity for a young scientist to meet leaders," added Maroney. "Participate in discussions. Bring a poster."

Ringe suggested that first-time attendees consider rooming with someone else. "One of the easiest ways to get to know someone is if you're sharing a dorm room." Ringe also echoed Maroney's advice. "The way to get yourself known is to present a poster," he said. "Many of the Gordon Conferences choose, from among the posters, people who will then give a short presentation on the last day. That's a tremendous vehicle to become known."

One final bit of advice for all attendees: Be prepared to have a great experience. As one scientist put it as a recent conference concluded: "This conference represents what science should be all about—but rarely is. In many ways, I don't want to leave, because it is so exciting to be able to discuss ideas in such an exciting forum. But on the other hand, I have so many new ideas that I can't wait to get back to the lab."

Randy Wedin, founder of Wedin Communications, is a science writer in Wayzata, MN. He attended the "Angiotensin" GRC in Italy in May 1995 and fondly remembers the intense discussions about research, the delicious food, and the post-banquet dancing.

The GRC Magic

The more you talk with scientists about the GRC program, the more you realize there is a bit of magic and mystique involved in the whole GRC experience. The following story may capture the GRC experience as well as any.

Every GRC features a banquet on the final evening, and different conferences have a variety of traditions for this event. One conference features limericks and songs. Another conference always puts on a talent show. In recent years, the banquet at the "Bioorganic Chemistry" conference has spotlighted the magic tricks of Koji Nakanishi (ACS '51), professor of chemistry at Columbia University, author of more than 700 scientific papers, and one of the world's foremost bioorganic chemists. Nakanishi is well known for entertaining others with his magic tricks. When he received the prestigious Welch Award in Chemistry in 1996, for example, he entertained the banquet guests with his magic.

The September 12, 1997, *Columbia University Record* told this Nakanishi story:

One of his favorite illusions is to place a spectator in a cloth bag, tie the bag tightly, have the knot signed to prove it has not been tampered with, and place the spectator behind a screen. After a minute, the spectator reappears holding the bag, which is passed around for inspection to show there are no openings.

At a GRC in New Hampshire some 10 years ago, the illusion backfired. Before about 100 colleagues, Nakanishi drew the cloth bag around an attendee, John Partridge (ACS '65), and tied the bag. Partridge played a trick on the magician, however, and when he reappeared, to the astonishment of all, it was without any clothes at all.

"I was there and saw it, although I still have trouble believing it," said Jon Clardy (ACS '67), Horace White Professor of Chemistry at Cornell. "As an aside, I believe that Koji was as surprised as anyone that Partridge didn't have clothes on. He was, however, holding a small gong to preserve some level of modesty."

As a metaphor for the GRC experience, this story contains all the key elements—well-known colleagues letting their guard (and their clothes) down, collaborations leading to new and unexpected results, and a memorable experience that will never be forgotten.

Isn't it about time that you attended a Gordon Research Conference?

—RW