Minority Scientists & the Corporate World


SACNAS News

The SACNAS News, published three times a year, explores current issues within the minority scientific community, celebrates the achievements and contributions of members, and provides resources for academic and professional development.

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Dr. Dulce Ponceleon presenting at the Science and the Corporate World symposium at the 2004 SACNAS National Conference.
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SCIENCE FOR AMERICA’S FUTURE
Fall 2005

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Interest in Article Authorship/Queries
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Article and Community News Submissions Deadline
September 20, 2005
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October 4, 2005

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NEWSLETTER THEME
Fall 2005
Science for America’s Future

Innovation for Our Energy Future
The Time: Now
The Opportunity: Yours

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Letter from the President
Marigold Linton, Ph.D.

With this issue, SACNAS News is launching an expanded newsletter. We hope you will share your ideas to help us make the publication meet your needs and match your interests. We are excited about this change and hope that the broader range of issues we can cover with the new format will warrant continuing this experiment. You will observe that for the first time we have advertising opportunities. We hope these are useful—and that you will find the newsletter a convenient place to learn about educational resources and job opportunities.

MINORITY SCIENTISTS IN THE CORPORATE WORLD
One of the great challenges for this new generation of scientists is how to prepare ourselves for the world of work that will carry us through our lifetimes. It looks like it was easier for those of us in earlier generations—get one job, stick with it for 40 years, and then retire. There are perhaps greater complexities for the current generation of scientists. It is clear that many individuals will have five or more jobs during their careers. But there are a variety of other differences. In earlier generations, although there were always exceptions to this, those trained for academia became faculty members at a college or university. And those of us who have had four or five jobs in our careers have often done this by moving from one academic institution to another. Although I have never worked as a professional in an industrial setting, I am surrounded by individuals who have had such involvements in corporate science. For example, my good friend and colleague, Dr. C. Ruan Mildeau (a pharmaceutical chemist), was a professor at a university. He decided to expand his horizons and, for many years, worked for a major pharmaceutical company. He returned to academia and is now a distinguished professor of pharmaceutical chemistry at the University of Kansas.

Furthermore, a number of my friends have worked contentedly within the corporate sector for their entire careers. If they wish to teach, as many do, they become adjunct instructors at a college near their place of employment. The long and the short of it is that what individuals educated in the sciences can do is expanding. Outstanding research—both basic and applied—is being done by people in both university and industry settings, and by those with a foot in each camp. Some, with greater or lesser success, start their own businesses. When I started my career, there was vast potential for growth. There were a few full professors, a few associates, and huge numbers of assistant professors. And there was the promise of opportunities are surely still out there. But one can only guess where they may be in a decade. I can promise you that there are people who have taken their Ph.D.s and found a wonderful, productive, and creative life for themselves in every location and situation. Think of these possibilities as ecological niches. Darwin’s finches adapted to use every part of their environment. There are migratory animals; there are those who remain in a single location their entire lives. The trick is to find the right ecological niche for you, one that will permit you to continue to expand your spirit over a lifetime.

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MINORITY SCIENTISTS in the Corporate World

Dr. Dulce Ponceleon couldn’t be happier; after all, the corporate research environment at BF’s Almaden Research Center, where she is a research staff member, fits her perfectly. It allows her regular interaction with customers and enables her to make a difference—to see the direct, tangible impact of her work as a researcher. “Academia and the corporate world offer different sets of opportunities—both valuable, of course, but for me, I’ve found the right mix in a corporate setting.”

For Ponceleon, who works on digital content protection, that “mix” includes a typical day filled with drafting new patents applications, responding to technical questions, communicating with customers, writing code, checking in with members of her team, collaborating with other researchers, and sometimes, talking with fourth graders about careers in math, science, and engineering.

...industry may hold a key to addressing the underrepresentation of minorities within the sciences.

Director of university technical recruiting and university relations, has seen a major change in the corporate world. However, since employment in corporate research and development has increased four times faster than the overall workforce in the past two decades, and projections point toward a continuation of this trend, industry may hold a key to addressing the underrepresentation of minorities within the sciences.

Factors Motivating Corporate Diversity

Many of the largest companies with research and development components have made focused strategic efforts to embody diversity in their businesses. Ponceleon believes that the motivations behind such transformations center on an understanding of the realities of globalization: “People buy from who they like and people like people that they can relate to—people that are culturally closer and who can understand the way they think and what motivates them to make decisions.”

Michael G. Loudin, manager of global geoscience recruiting and new hire development at ExxonMobil, echoes this view. “We feel that a critical contributor to our success is a diverse workforce that is representative of our customers, our suppliers, and the communities in which we operate.”

Mitchelle Cook, senior manager for diversity and workforce strategies at DaimlerChrysler, explains that, in the early to mid-1990s, the company shifted its diversity focus from affirmative action in hiring to the infusion of diversity into all business aspects: “Diversity really is a business imperative for companies. Our Diversity Council is comprised of our top 15 executives in the company. It’s chaired by our chief operating officer and our senior vice president of human resources. They meet monthly to talk about diversity initiatives and strategies enterprise-wide.”

Proctor & Gamble (P&G) and a growing collection of corporations have given their diversity values statements some teeth. Explicit articulation of diversity policies is paired with accountability; stock options incentives are wedded directly to corporate executives’ performance on diversity goals. Tracking and appraisal of diversity progress take place annually, measuring against internal goals and benchmark surveys comparing P&G with its competitors.

During his 30 years at P&G, Dr. Ron Webb, manager of doctoral recruitment and university relations, has seen a major change in the company’s workforce. Currently, his average annual rate of underrepresented minority hires is 18 percent, is about three times what would be predicted based on the proportion of minority Ph.D. recipients to the overall Ph.D. pool. And those individuals, for the most part, are staying with P&G. The annual turnover rate at P&G for all employees is 6 percent; for minorities it is 7 percent. Webb believes in the inherent value of diversity: “…a diverse team can out-think, out-innovate and out-invent a homogeneous team anytime.”

It Takes a Commitment to Diversity

John R. Lothrop believes that creating a truly welcoming environment imbued with the richness of diversity results from the sustained, dedicated actions of individuals. “It really doesn’t matter what role you have. As long as you have a passion for that cause, you can make things happen.”

Lothrop’s personal commitment to making things happen for Native American students spans several decades. He is a distinguished member of the technical staff at Avaya Inc., and vice president of the company’s employee group, Natives Offering Value at Avaya (NOVA). He also serves as co-chair of the Corporate Advisory Council of the American Indian Science and

How to Investigate A COMPANY’S RECORD OF DIVERSITY

Company website—look in the company profile, employment or community relations section of the site for information related to diversity:

a. Diversity statement and policies
b. Statistics regarding employee demographics

Awards and recognitions—one on the company’s website and on the sites of specific award-givers, search for any honors the company has received. Look for trends over the past several years, as well as recent awards. (See next page for example websites.)

Employee groups—contact the company’s employee resource networks, also called affinity groups or diversity alliances, with your questions about the company, its atmosphere of inclusion, etc.

Company prospectus—contact the investor relations department of any publicly traded corporation to request a copy of their prospectus. (To facilitate the process, we suggest acting the part of a potential investor and providing an off-campus address.) The prospectus provides insight on the company’s critical research projects, allocation of resources, information on key staff members, and much more.
General Information about Science Careers in Industry

- AARS, ScienceCareers.org – general science career information and resources such as Paths for Young Scientists – sciencecareers.org/sciencecareers/index.html
- Hispanic Professional Magazine's Hispanic Corporate 100 – lists companies on a broad spectrum of corporate activities in addition to employee demographics – www.hispanicadvantage.com/index.html
- Australian Multicultural Society’s Career Network – includes links to devastating career information for minority scientists – careersnetwork.com/australian.htm
- Massachusetts Biotechnology Council – information on career options including educational and experiential requirements, job descriptions, salary range, etc. – www.massbio.org/About_massbio/directory/careers/index.html
- IEEE, Chronis of Higher Education, Chronicle Careers – sections devoted to non-academic careers for Ph.D.s and Beyond – www.ieee.org/about/chronicle/section/007/0700707400000010.html
- MarineCareers.net – profiles careers related to marine sciences, salaries, jobs in industry, etc. – http://www.marinerecruiters.com/index.php?lan=113

Resources

RECOGNITIONS: CORPORATE EXCELLENCE IN DIVERSITY

- American Association for the Advancement of Science, ScienceCareers.org Top Employers Survey: sciencecareers.sciencemag.org/feature/advice/foc_112604.shl
- Diversity Top 50 Companies for Diversity – lists companies broken down by various criteria – www.diversitytop50.com/index.html
- Hispanic Magazine’s Hispanic Corporate 100 – lists companies on a broad spectrum of corporate activities in addition to employee demographics – www.hispanicadvantage.com/index.html
- Australian Multicultural Society’s Career Network – includes links to devastating career information for minority scientists – careersnetwork.com/australian.htm
- MarineCareers.net – profiles careers related to marine sciences, salaries, jobs in industry, etc. – http://www.marinerecruiters.com/index.php?lan=113

Advancement of Science, View rankings based on diversity, environmental citizenship. Tools allow viewers to explore the diversity of companies, including those not required to adopt them but you do need to adapt to them.”

Krista Swenda, Crane Clan of the Miami of Oklahoma, is chair of the Native American Employee Resource Group at DaimlerChrysler. She has experienced the culture shock that students, especially first generation college students, deal with when entering the corporate world. She advises potential employee networks and the need for individuals to educate themselves on the company’s employee networks and diversity program and then to connect with them as soon as possible. These groups can be immeasurably helpful in adjusting to the corporate world and making translations between the culture of one’s heritage and that of the company.

Preparing for a Career in Industry

Exploring whether a career in industry is one’s future and preparing to enter that career as a highly qualified candidate is something that Poncelet advises students to begin well before graduation. “We isolate ourselves because we are so busy trying to finish, just trying to accomplish our coursework. We say ‘Oh well, corporate life, I’ll worry about it after I graduate.’”

It’s undeniable that the scientific landscape is constantly changing. Opportunities in research for industries continue to expand and it is imperative that students are prepared to obtain them. Faculty members need to educate students, and in many cases themselves, on the options available, the differences between industry and academia, and the specialized training needed to be successful in the corporate arena.

Individuals working in industry are in agreement that students must take ownership over their career preparations. For Webb, the bottom line is: “There is no one to be considering as a key player other than just your degree. Clearly we expect a Ph.D. first and foremost, to be able to demonstrate technical mastery in their field.” In addition to this, however, Webb describes another equally important set of criteria: “the skills that round you out as a scientist, such as creativity and innovation, communication and public speaking skills; the ability to collaborate and to work well with others.”

Webb suggests that whether students have a strong mentor or not, they need to take responsibility for cultivating these skills on their own. “Find ways to bring other people into your project; seek the advice of others; be proactive in developing collaboration, communication, public speaking and project management skills so that whether or not you go to industry or academia or government lab service, these skills pay dividends in all hiring sectors.”

To further prepare for an industrial career, Lothrop recommends a corporate internship to develop critical insights and talents: “[An internship] helps the student understand one or more corporate cultures. It also gives them real work experience in the field.”

Moreover, Webb advises students to take advantage of any—opportunities from internships to professional meetings—to build a network and develop contacts. “The more people you know the better. Don’t be shy about using network opportunities. Any one of those people from industry could be a future hiring manager; someone who might be looking for summer interns or someone who can simply assess the quality of your work and speak on your behalf.”

Finding a place within the world of corporate research and development is proving rewarding to a growing number of minority scientists. To balance success and fulfillment in entering that world, Lothrop concludes, “It’s extremely important to remember who you are and where you come from, that’s your foundation. Don’t give that up but make that part of you.”

Los M. Munden is a senior editor at SAGNAs News.

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Investing in the Future
Corporations and the Carl Hayden
High School Robotics Team

By Allan Cameron, Ph.D.

Two Phoenix teachers and the 16 high school students of the Falcon Robotics team sat in the hotel room fresh from winning the Los Angeles regional FIRST (For Inspiration and Recognition of Science and Technology) award. The award allowed them to continue to the national championship in Houston. Yet rather than feeling joy at their success, the team was disappointed. They did not have the needed $10,000 to make the trip to Texas.

A year of car washes and the hotel room in Houston added up to a greater expense than the club’s $1,000 remaining balance. Senior Dulce Matus was emailing her new friend Steve Sanghi, CEO and chairman of Microchip Technology, Inc., for help. They had met a few weeks earlier at an Arizona competition. Sanghi’s response? He sent out a personal endorsement and email to many of the leaders in Arizona, and within days, companies and individuals pledged enough funds to send the robotics team to the championship.

That spring of 2003, the rookie team placed in the bottom third of the pack, but they learned that a partnership was more than a district feel-good program and a free lunch. It was networking, reaching out, asking, writing proposals, and experiencing hundreds of rejections. The kids learned to use the phone and converse with decision makers. They learned the art of selling their ideas and passion. They became an engineering enterprise.

The robotics team returned to the national championships in 2004 and again in April 2005. This time it was awarded the second highest award, the Engineering Inspiration Award, in the new international competition (1,000 teams, 16 countries). The team also competed in the Marine (Marine Advanced Technology Education) Remote Underwater Operated Vehicle competition and was presented the first place award, beating the college team from the prestigious Massachusetts Institute of Technology.

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Bill Gates (founder of Microsoft), Craig Barrett (chairman of Intel), Dean Kamen (founder of DEKA), and others are warning Americans that we are losing our technical competitive edge in the global economy because our children are not proficient in mathematics, science, and engineering.

Fewer high school students are entering engineering now than 10 years ago, and the majority of the graduate engineering students in the U.S. are international students. The nation that produced so many talented scientists and engineers and put a man on the moon now shows greater interest in entertainers and sports personalities. We do not celebrate the people who truly contribute to improving our society. Is it any wonder that more students aspire to become NBA basketball players than engineers?

Dean Kamen started the FIRST robotics competition to provide an exciting sports-like venue for students to design and build a robot. The students and teachers have to not only become proficient in the engineering skills, but as Dulce learned, they have to network, raise funds, sell ideas, work as an effective team, and communicate. They also experience how exciting, creative, and fulfilling an engineering career can be.

There are few schools with the extra funds to finance a robotics team and fewer teachers with the background to work with the mechanical, electrical, and programming aspects of a robotics competition. Partnerships between high schools and the corporate community have become essential. Companies provide financial grants, but more importantly, they provide engineers and professionals to mentor our teachers and students.

Partnering with Corporate Mentors

On Karen Suhr laid down the soldering iron to explain to Pablo Santillan why the polarity on a LED is important. Between the jokes and the Credence Clearwater music blaring in the background, Suhr, a physicist at Microchip, works with the students every Monday afternoon on electrical and programming challenges on the robot.

MARCOS GARCIA-ACOSTA FROM THE INTERNET LATINO NETWORK HELPS THE TEAM WITH PUBLICITY, PROMOTIONS, AND PROFESSIONAL NETWORKING. THE JUNE 2004 MATE-VICTORY OF CARL HAYDEN HIGH OVER POWERHOUSE COLLEGES AND UNIVERSITIES WAS IGNORED BY THE MEDIA. IT WAS GARCIA-ACOSTA’S TALENTED SALARIESHIP THAT FINALLY RESULTED IN WIRE magazine’s April 2005 article, “La Vida Robot” (http://www.wired.com/wired/archive/13.04/robot.html). The resulting attention and support have created incredible opportunities for the robotics students.

Carol Lindsay of Phelps Dodge works with Annmarie Regalado, Luis Gutierrez, and Marie Keller on their presentations. The team has to be able to present the Carl Hayden robotics story to the governor, members of the U.S. Congress, junior high students, parents, school boards, or a panel of engineers with little notice. They do it well.

The Carl Hayden robotics team is honored by the city of Phoenix for its partnership with Intel, Honeywell, Philips Dodge, Wells Fargo, and local businesses.

As these professionals pick up tools and work alongside the students, they talk not only of engineering and technical skills, but they also share personal stories, dreams, and challenges. The geek stereotypes fall away as teenagers interact with real people who seem nothing like the engineering caricatures promoted in the media. The Carl Hayden students, who seldom meet anyone with a college degree except their teachers, learn of the possibilities that a college education offers.

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How can I get the corporate community involved in my classroom?

Tips for teachers:

■ Talk to everyone you know, from your students’ parents to your neighbors to the folks at the gym, get the word out about your project. Anyone involved in industry can help you connect with mentors and potential sponsors.

■ Speak up. Present an activity at the school board meeting, local Kiwanis club, Chamber of Commerce, or wherever people are looking for speakers.

■ Volunteer to be a speaker at a professional science society’s regional or national meeting. Have your students present their work.

■ Send press releases and emails to local newspapers and companies. Join online chats, or communicate via weblogs (blogs) and broadsides.

■ Ask for help directly. Write, call, or email corporate CEOs and presidents.

■ Contact the community relations departments of corporations about programs specifically designed to support K-12 science competitions. For example, ExxonMobil sponsors employees to serve as science fair mentors and judges. (www.exxonmobilchemical.com/Public_INFO/WorldwideEngIngrADepartment/SciExSciDucatiO Citizen_science.asp)
much in non-revenue-generating technology education, CEO Craig Barrett said, "Basically, it’s the right thing to do." Lavadis, the inspirational teacher at Carl Hayden, will coach the robotics team for thousands of hours again this year without pay. "It really makes a tremendous difference in these kids’ lives. When our kids are given the same opportunities as more affluent schools, our kids can compete with the best. Too often they are told to be satisfied with second best.”

Aspirations and Success
Junior Lorenzo Santillian has raised his grades from mostly Ds and Fs to As and Bs. He now aspires to be an engineer or a gourmet chef. He credits working with the team and the adult mentors as "the hardest fun" and responsible for his new attitude toward his education.

Carl Hayden High School, working with the business community and the individual efforts of teachers and engineering professionals, has produced amazing and nationally recognized results that can be replicated in any school.

Dr. Matsu has completed her second year at Arizona State University’s college of engineering. She entered high school as a new immigrant from Mexico with no English skills; her aspiration was to graduate from high school and work at the local mall. Now, as an intelligent, bilingual, Hispanic, female electrical engineering student who knows people at Microchip, she certainly has a bright future. Steve Sangh made a wise investment.

Dr. Allen Greene is a computer sciences teacher at Carl Hayden Community High School and a co-founder of the Falcon Robotics Club and the Arizona Radio Club. www.falconRobotics.org; email: N76@jacks.net

2. Dean Karns, A Call to Action from Dean Karns, The Institute (IEEE) www.theinstitute.ieee.org
3. "The number of students who plan to major in engineering upon college entrance has continued to decrease.”

The SACNAS e-Mentoring Program connects minority-serving K-12 teachers with research scientists. Dialogue presents the results of partners’ year-long collaboration.

CULTIVATING A SENSE OF PLACE:

- e-Mentoring with Western Science & Traditional Knowledge

By Mildred Chino and Quincy Spurlin, Ph.D.

Educator Mildred “Millie” Chino, Third-Grade Teacher, Laguna Elementary School

Scientist: Dr. Quincy Spurlin, Scientist/Educator, University of New Mexico

Pairing in 2003

The focus of our exchange is aimed at strengthening third graders’ sense of place and providing them with a foundational knowledge of environmental science—not just any third graders, but those of Laguna Pueblo, where the world’s largest open-pit uranium mine has disrupted traditional living and the ecosystem. Local places and environmental events are incredibly rich sources of meaningful science content for all learners. It begins with making conscious one’s own sense of place.

A Sense of Place

When you have a sense of place, you are very aware of what happens to it. When a place is damaged, people often feel powerless. For students to be empowered to make positive changes in their “places,” we educators are challenged to help students recognize the “particulars” of those places. The particulars could include the macro-invertebrates in the streams of the Pueblo, the surrounding high plateaus and sandstone mesas, where and when to pick traditionally used plants, and the impacts of the uranium mine on outdoor bread ovens as well as on the health of tribal members.

Turning “Place” into Curriculum

How can we take science content knowledge and our own passions for our “places” and translate these driving forces into an interconnected curriculum? Once we start to look for them, it becomes relatively easy to identify elements, activities, and events in our home communities that embody the science we must teach. Our role is to elevate the connections between these events, our students, and the inherent science. For example, at Laguna, as with everywhere, we are concerned with water quality. The science? Look for the interconnectedness of all things, including cultural practices. Students can sample macro-invertebrates and use them as indicators of stream health. Looking at the same stream, students can identify what is happening on the land around the stream and the land upstream. What are the disturbances? What is getting into this water that reduces quality? And what is...
opportunities. My mother also had a limited education, so he didn’t have many choices. I graduated high school. We were poor and had to move as my father got new industrial construction jobs. He emigrated from Ireland without a high school education out what that was.

I chose college because I thought it was a big positive—I didn’t know college also meant work. It was an awful surprise! I called my parents all the time to pay for it, or I could live at home and go to work. To find running a lab is working with students, introducing them to the excitement of discovery, to help them realize that they are very capable people who can do anything they really want to do.

Science cannot grow without diverse perspectives. It took a long time for me to understand this and to trust my own capabilities. I couldn’t have accomplished without the help of mentors who saw my potential and gave me a leg up when I needed it. Thanks to them, I went beyond even my own expectations. Now part of my job is showing students important their contributions are to science. When I started my geochemistry research laboratory, I asked them to come up with the name. They decided on “WaterRock Institute” (WRI), which summed up our research and gave us a unique name. My favorite aspect of running a lab is working with students in other disciplines. He was right, and now I can help students by connecting them with well-respected professionals in their fields. Being able to make a difference is important to me. Here at Arkansas State University I started the summer Research Internships in Science of the Environment (RISE) program so undergraduate students can get hands-on research experience. Besides undergraduates, we also bring in underrepresented minority high school students from across the country. These are students like myself, interested in science, who maybe were told either directly or between the lines that they weren’t good at anything and weren’t going anywhere. They really bring unique insights to the design of their projects, inspiring my own research. Science cannot grow without diverse perspectives. But it took a long time for me to understand this and to trust my own capabilities.

When I was young, my father bought me a toy microscope. I used it all the time. I collected objects to observe and made up experiments. When we studied frogs in high school, I would turn in extra projects. I did on tadpoles I had studied at home. But my science teachers weren’t impressed. I was usually bored in classes, and I even got a “D” in biology. My mother who was from the Narragansett nation of Rhode Island, had advice that helped me through the boredom. “There’s no substitute for curiosity, but not necessarily education,” she always told me, “There’s time and there’s today’s time. Make sure you get done what needs to be done, and you do it well. But don’t let a clock dictate what you’re doing!”

From what she said, I eventually realized that is okay to learn at your own pace and to remember there's nothing I can't do. I learned this for myself after a rough start in school. We moved around a lot when I was growing up, and lived in six towns in five states by the time I graduated high school. We were poor and had to move as my father got new industrial construction jobs. He emigrated from Ireland without a high school education, so he didn’t have many opportunities. My mother also had a limited education, but my parents both knew college would make a difference in my life. However, most of my friends just thought school was something you had to do until you finished. I am a first-generation college student, but not necessarily because I wanted to! After high school, my parents said I should go to college and that they would help me find a job to pay for it, or I could live at home and go to work. In Basking Ridge, New Jersey, where I lived, a high school education meant a job at the gas station or 7-11.

By Marisa Mercado

In 1996, the SACNAS Biography Project exceeds 120,000 visitors a year (www2.sacnas.org/biography/default.asp). It has become an irreplaceable tool for students and educators who are interested in the accomplishments of Chicano/Latino and Native American scientists. The SACNAS Biography Project is available on CD-ROM for students, introducing them to the excitement of discovery, to help them realize that they are very capable people who can do anything they really want to do. SACNAS Biography Project

National Institutes of Health (NIH)

Special Assistant for Clinical Research to the Director, National Heart, Lung, and Blood Institute (NHLBI)

The NHLBI is seeking exceptional candidates for the position of Special Assistant for Clinical Research to the Director and other senior Institute staff on programmatic issues related to the design, organization, conduct and analysis of clinical research on heart, lung, blood and sleep disorders. Areas of responsibility include oversight of clinical investigations, data and safety monitoring recommendations, monitoring of adverse event reporting, review of conflicts of interest, and interactions with Institutional Review Boards and the NIH Office for Human Research Protections. The incumbent will develop and update Institute policies and guidelines on clinical research. In addition, the Special Assistant will participate in senior Institute level committees and NIH-wide clinical research and biosciences committees. Applicants must possess an M.D., Ph.D., or equivalent degree and senior-level research experience and knowledge of research programs in one or more scientific areas related to diseases of the heart, lung, and blood and sleep disorders. They should be known and respected within their profession, both nationally and internationally, as distinguished individuals of outstanding scientific and clinical competence.

Salary is commensurate with experience and a full package of Civil Service benefits is available including retirement, health and life insurance, long term care insurance, leave and savings plan (401K equivalent). C.V., bibliography and two letters of recommendation must be received by September 1, 2005.

Application packet should be sent to:

HHS and NIH are equal opportunity employers.

Employers

The NIH encourages the application and nomination of qualified women, minorities, and individuals with disabilities.

The NIH encourages the application and nomination of qualified women, minorities, and individuals with disabilities.
I am a Ph.D. student in physical chemistry at the University of California, Santa Cruz, specializing in nanoscience. In late spring of 2004, my research advisor approached me about applying for an internship at Intel Corporation. The company had contacted him to see if he had any graduate students interested in working at Intel for the summer. Since my research made a good match with Intel’s interests, I was encouraged to apply and got the job.

The Business of Science
My experience in the corporate sector was a positive one, and I will definitely consider pursuing a corporate job after graduation. I found that the corporate sector, although competitive, is better organized than the academic sector. Funding is usually not a problem as it is in academia, and teamwork is a valued priority. This focus on teamwork meant that personal differences were put aside. Conversely, in the academic world, I’ve seen that personal differences often interfere with the success of a project.

My three months as an intern in the Precision Biology Group at Intel in Santa Clara, California, exposed me to the business end of the corporate work environment. It seemed as if everything, from the color of one’s desk to the plates in the cafeteria, were designer-coordinated! Everything that an employee might need to do their work in a comfortable and exciting way was provided, including a state-of-the-art gym with free recreational classes.

The Value of Teamwork
The usual competition that one encounters in academia was non-existent in my work group—collaboration was valued over individual competition. I felt motivated by their acceptance and leadership who maintained a record of the progress for each member of the team. The deadlines for each objective and deadline that had to be met. Each day began at 7:30 a.m. and ended at 5:00 p.m. But on some days, when progress reports were due, I was in the lab as early as 6:00 a.m. and stayed as late as 10:00 p.m. This might sound like a lot of work, but the team spirit helped make the long hours enjoyable and fun.

The Research Life
My project focused on the biological applications of nanoparticles. Although my background lies in the field of nanoscience, the problem was complex enough that it required me to draw upon all of my disciplinary knowledge. The deadlines for each objective of the project added pressure for me to produce results. It was an environment of creative stress. We all worked for one shared goal, and the success of our project was the priority. This unity helped me endure the long summer days of working in the lab.

My daily activities varied from week to week depending on the objectives and deadlines that had to be met. Each day began at 7:30 a.m. and ended at 5:00 p.m. But on some days, when progress reports were due, I was in the lab as early as 6:00 a.m. and stayed as late as 10:00 p.m. This might sound like a lot of work, but the team spirit helped make the long hours bearable and fun. Each Friday, a series of group meetings took place. Here, individual presentations were given about progress made during the week. The format of the presentations was always formal. After the meeting was over, copies of the presentations were handed out to leaders who maintained a record of the progress for each member of their respective groups. These records of progress served as the raw evaluative material for future promotions of employees.

of my own progress at Intel is being kept on file in case of future employment.

Professional Development
I learned many new skills during my summer with Intel, and I refined other skills that I already had. One of the most important lessons I learned was the concept of teamwork. Individual success is rewarded but only as it relates to achieving objectives of the group. My organizational skills greatly improved as a consequence of the collaborative orientation of the work. Presenting my research results on a weekly basis helped me stay focused and facilitated frequent feedback from my co-workers.

Diversity at Intel
There were probably over 100 interns during the summer that I was at Intel. In my unit, there was one other intern from the University of Wisconsin at Madison. Intel tried to organize activities for all of us, but given that we were working 10 or more hours daily, attendance was difficult. From the few interactions I had, I did not see any other Latino or Native American interns. None of my team members were Latino or Native American either. The other research groups I interacted with had perhaps one underrepresented minority (African American, Latin, or Native American) at most. On the whole, I felt the company was diverse, especially in terms of Asian American employees. A lot of the underrepresented minorities seemed to work in the labs that were not science oriented.

However, I could definitely see myself working for Intel someday. Although the number of underrepresented minorities was not what it should be, the problem of lack of diversity also exists in academia, and hence I have learned to deal with it. The fact that Intel values teamwork very highly is one of the attractive characteristics of the company and industry in general.

My summer at Intel helped me develop myself professionally. I made contacts that will be useful to me in the future, and I learned skills that are helpful both inside and outside of the lab. I highly recommend that students in science consider doing an internship in industry. It will be an experience that helps you no matter what path you ultimately choose—industry, academia, or government.

Edward Olano is a Ph.D. student in physical chemistry at the University of California, Santa Cruz.

STUDENT FORUM

the Science of Teamwork

By Edward Olano

I was told that I would have access to any instrument, chemical, or resource I needed in order to complete the project. My mentor said, “Edward, we want you to succeed. Please let us know what you need for success, and we will give it to you.” I was surprised to hear this, as my experience in academia is that such comments rarely come to fruition. I felt as if I had entered a “toy store” and was given permission to play with anything!

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Edward Olano is a Ph.D. student in physical chemistry at the University of California, Santa Cruz.
The Colloquium is designed to give undergraduate students majoring in chemistry or life science a broad overview of what R&D is about in industry. The Colloquium will feature lectures on cutting edge sciences and its application to R&D. During the course, students will be exposed to some of the latest technologies and processes used to discover and develop new health and beauty care products. The program will also provide students an opportunity to better understand what a technical career would look like in an industrial R&D setting.

Program highlights include:

- An overview of major technical functions (e.g., genomics, modeling, informatics) on which pharmaceutical and beauty care product R&D is based.
- Presentation of case studies on product discovery and development.
- An opportunity to meet with leading scientists and technology managers and get their perspectives on the innovation process and challenges to R&D.
- A review of how companies develop an understanding of what matters most to consumers.

The Colloquium will be offered to a limited number of candidates. The applicants must be full-time college students, preferably in their sophomore, junior or senior years, majoring in chemistry or life science program. Candidates must be a U.S. citizen or national, permanent resident, refugee or asylee, or temporary resident under the legalization program of the 1996 Immigration Act. Accommodation, meals and travel expenses will be paid by Procter & Gamble. Applications must be received no later than July 30, 2005.

To obtain a brochure and application, please visit our website: http://www.pg.com/science/rd_colloquium.html. Students can also contact Ms. Lynn Parrott at 513-622-1574 or email parrott@pg.com.

**Free Community Events at the 2005 National Conference**

**Pow Wow**
Friday, September 30, 9:00 pm – 12:00 midnight, Colorado Convention Center, Ballroom 1
Celebrate a night of cultural diversity at the annual SACNAS Pow Wow. Come share the traditions of the Society’s Native American members in this intertribal gathering of music and dance.

**Community Day**
Saturday, October 1; 9:00 am – 12:00 noon, Colorado Convention Center, Exhibit Hall D
for k-12 & community college students
- over 250 representatives from colleges and internship programs
- hands-on science activities sponsored by the National Renewable Energy Laboratory (NREL)

For the whole family:
- health awareness and family health history
- blood pressure and diabetes screenings and blood donor drives
- laptop computer craze at 11:30 am.

**More information**
- 877-SACNAS 1
- info@sacnas.org
- www.sacnas.org

**Featured Mentor:**
**DENNIS O’MALLEY, PH.D.**

Q: I’m going to be presenting a poster at the SACNAS conference. What do I need to know about talking with the judges about my project?
A: Be confident; you are the expert on your research. But be sure to acknowledge your limits as well. You can’t know all the background or have explored every path in your research area. Keep in mind that judges are looking for good things to say. Scientists, especially those in organizations like SACNAS, want to develop and encourage the next generation.

Prepare for meeting the judges by reading your own poster a couple of times. I find that after I’ve worked on something for a long while, it turns to mush in my own mind. So I try to look over the final product as if it belongs to someone else. What would that person see that they would ask you about?

Q: As a first-generation college student, I often feel very out of place with the other students in my science classes—like I can’t say something for a long while, it turns to mush in my own mind. So I try to look over the final product as if it belongs to someone else. What would that person see that they would ask you about?
A: As a first-generation college student, I often feel very out of place with the other students in my science classes—like I can’t keep up with them. A lot of the other students talk about how their parents are doctors or professors, and they talk about all of the science projects they did in high school. Sometimes, I feel like I am going to fail the course because I haven’t had the same preparation as them. I mean, I didn’t even know what an AP (advanced placement) class was until I got to college. What should I do?

Q: What do you think it was like to go to college with people who have talent or wouldn’t be in college? You can approach your education with energy and concentration, developing a work ethic second to none. You can’t do anything about the past work on the future. Along with working hard, develop a social network. In general, college students with a circle of friends stay in school and do well. Be as friendly as you can. This is a skill that will help you everywhere. Try talking to the people sitting next to you in class. You’ll hit it off with some of them. Then form a study group both for social and academic reasons. This will give you a group in which to anchor yourself and you can learn from the greater experience of your colleagues. Do your part by having solid notes and a thorough study of that particular class. In the end, effort pays off.

Dr. Dennis O’Malley received the 2004 SACNAS Distinguished Community/High School College Mentor Award. He has been on the faculty of Haskell Indian Nations University for over 20 years.

To submit a question to a Viewpoint mentor, contact editors@sacnas.org.
The Corporate Postdoc

a world of possibilities

By Lino Gonzalez, Ph.D.

IT WASN'T UNTIL the “dot com” boom and the explosion of startup biotechnology companies in the late 1990s that it occurred to me that a career in industry could be a possibility. During these years, I was building my scientific reputation and publication record as a postdoc at Stanford University. For many new Ph.D. graduates, accepting a postdoctoral position or job in industry is perceived to be equivalent to closing the door on an academic career. The catch is, if you have never experienced working in industry, how do you know you will like it?

So, naturally, I was worried that industry might be a death knell into scientific obscurity. On the other hand, I recognized that biotech companies had exceptional resources and access to groundbreaking technologies. I was attracted by the practical aspect of developing therapeutics to treat patients and the prospect of spending more time in the lab, rather than writing grants and preparing lecture material.

Entering the Corporate World

After my academic postdoc, I interviewed exclusively at biotechnology companies. Some reinforced my original concern. I remember being asked during an interview how I felt about leaving academia. I was cautioned that research in industry was very different and not focused on publications. Immediately, I heard that scientific death-knell. I was just about to accept this fate when I received a phone call inviting me to interview at a company in San Francisco. When I visited, I was struck by the fact that so many of the scientists in the department had spent the majority of their professional careers there. They were respected in the scientific community and recognized for their contributions. At first, I thought there must be some reason why these scientists felt compelled to remain with the same company for over 20 years. Another scientist handed me a pile of publications from his lab. Whoa! Publications! Like in academia, scientific creativity was high valued, and scientists were encouraged to publish and participate in scientific meetings. The line between corporate and academic research was blurred.

A Short Course in Biotech History

To understand how this corporate culture came about, let me review a little biotech history. Twenty-nine years ago, a venture capitalist named Robert Swanson recognized the commercial implications of that technology was called recombinant DNA, and it made possible the production of human proteins, such as insulin, in bacteria. Swanson called Boyer and managed to secure a 10-minute meeting, during which they agreed to form a company. They hired a few key scientists and set out to prove they could make a human protein in bacteria.

(Stephen S. Hall has chronicled these events in a book called Invisible Frontiers: The Race to Synthesize a Human Gene, published by Oxford University Press.) Today, the original converted warehouse where those first experiments were done is still standing, surrounded by a growing campus of over 30 buildings. The company was named Genentech, short for Genetic Engineering Technology.

Boyer had strong feelings about the philosophy behind the original business plan. He was an academic, so he knew how important it was to bring in scientists who were outstanding and provide them with opportunities to establish their own reputations. He insisted that scientists publish their research and interact with the scientific community. He felt that this was extremely important for attracting outstanding young scientists into an industrial setting. “We tried to set up an atmosphere which would take the best from industry and the best from the academic community and put them together,” Boyer recalled during an interview for the Bancroft Library. Therefore, it is not surprising that recently many well-established academic scientists, including Drs. Marc Tessier-Lavigne, Andrew C. Chan, and Richard Scheller, have not hesitated to move to Genentech.

The Best of Academia to Industry

Clearly, there is a benefit to bringing the best of academia to industry. Postdoctoral students bring an infusion of fresh ideas and new techniques. Moreover, postdocs gain valuable insight from working in industry. I am sure that most postdocs who have experienced industry have had their eyes opened to new possibilities. Because of this win-win situation, Genentech continuously supports over 60 postdoc positions in research. The postdoc tenure typically lasts three to four years and includes semi-monthly internal meetings and an annual off-site meeting where their research is shared within the group. Postdocs are expected and encouraged to do cutting-edge science that will lead to new discoveries and publications. Importantly, they are not required to work on projects that have direct therapeutic applications and therefore enjoy an academic-like freedom to develop innovative research.

The Value of an Industry Postdoc

I think one of the most valuable experiences for an industry postdoc is the exposure to the corporate culture and research environment. The extent of collaboration and the willingness to work together was one of the biggest differences I noticed in coming to industry. Another significant difference is the multifaceted nature of a company. Although it would be easy to overlook these aspects, I encourage postdoctoral fellows in industry to learn from people outside of research. Try to learn management philosophies from different corporate leaders. Learn what works and what does not. These are experiences that are difficult to obtain from academia but could be extremely valuable down the road in managing a lab, a department, or an institute as your career progresses. I strongly encourage considering companies with strong diversity initiatives. Genentech supports a number of affinity groups that focus on diversity issues. The VIDA Latino Professionals group, for example, focuses on educational and health outreach to the local community and on the professional development of its members. We are also involved in recruiting initiatives to help identify qualified candidates to increase corporate diversity. In addition, affinity groups are a wonderful way to meet people around the company. The groups provide a sense of community and allow us to learn from each other’s experiences and expertise.

After the Corporate Postdoc

Where do the Genentech postdocs go after finishing their fellowships? Most continue their careers at other companies. A few find permanent research positions internally. There are some examples of fellows transitioning into areas such as project management or business development. But perhaps most surprising is the fact that many postdocs return to academia (see the Postdoctoral Program webpage at www.gene.com and the article “From Industry to Academia” published in Nature magazine, vol. 429, 2004, page 324). In this article, I have focused on Genentech, but there are many other opportunities to do postdoctoral work in industry. I hope that these words and the vision of Genentech’s founders will serve as a road map in what to look for in a company. If you choose to do your postdoctoral training in industry, be selective and realize that you can leave your options open to a whole world of possibilities.

Dr. Lino Gonzalez is a scientist at Genentech (see www.gene.com for more information). Along with other corporate representatives, he will be attending the minority postdoc activities at the upcoming SAGNUS Conference in Denver.
would have been completely different if I had benefited from that experience. For instance, I've learned you must publish a quality first. As an undergraduate student, I had had the insight I now have from my postdoctoral experiences. However, this stage is often poorly defined, creating vulnerability. Postdoctoral research is a critical step in a scholar's career. However, this stage is often poorly defined, creating vulnerability. SACNAS will help provide young scientists with "20/20 foresight," so they may benefit from the combined wisdom of our community. SACNAS will help provide young scientists with "20/20 foresight," so they may benefit from the combined wisdom of our community.

Current Special Interest Group (SIG) Activities: Vote in the online poll. We want to know that SACNAS should address regarding the postdoctoral experience. A selection of responses includes the following: (1) finding fellowships; (2) finding a postdoc position, project, and mentor; (3) types of postdocs—research (academic, industrial, government), teaching, policy, or international, and (4) networking and other community and networking skills. Access to Site: Full access to the virtual community requires that you be a current SACNAS member. When creating an account with CommunityZero (select Join at the URL above), we suggest using the same login as your MySACNAS username.

Online Behavior: Keep in mind that this is a professional community designed to facilitate information exchange and networking among members. Online behavior should reflect one's professionalism, so keep the discussions respectful and on topic. To facilitate networking among members, we ask that everyone disclose their name and email address under their profile within the community.

Questions: Direct questions to the site moderator; Dr. Joan Esnayra (joan.esnayra@comcast.net). By participating in the SACNAS postdoc activities, young scientists can benefit from the collective wisdom of SACNAS. Learn from our successes and avoid our past mistakes. I wish there had been such a resource when I was preparing for my career.

Dr. Alberto Roca and Arti Patel facilitated the Minority Postdoc Summit at the 2004 SACNAS National Conference, an event that propelled the implementation of the new postdoc activities at SACNAS.
Meet the New Ph.D.s of SACNAS

Enrique Alvarez, Ph.D.
Institute: University of Colorado Health Sciences Center
Dissertation Title: Characterization and Expression of the Benzene Family Gene in Humans, Mice, and Rats
Thesis Advisor: Dr. Curt Freed
Research Interests: Stem Cell / Gene Current Position: Medical student at University of Colorado Health Sciences Center

Stephanie Atencio, Ph.D.
Institute: University of Colorado Health Sciences Center
Dissertation Title: The Major Murine Lupus Susceptibility Locus NR4A2 Mediates B Cell Defects Required for IgG Anti-Nuclear Autoantibody Production in Mice Lupus
Thesis Advisor: Dr. Brian Kotzin
Current Position: medical student at University of Colorado Health Sciences Center

Donald Benn, Ph.D.
dbenn@nmsu.edu
Institute: Department of Biochemistry, New Mexico State University, Las Cruces
Dissertation Title: Expression of Acanthamoeba actin; (tac) Polyomavirus in a Gene Variants in Recombinant Yeast Hosts
Thesis Advisor: Dr. Glenn D. Kuehn
Research Interests: Applications of DNA microarray platforms
Current Position: Research assistant, New Mexico State University, Las Cruces

Kristie Grebe, Ph.D.
Institute: University of Colorado Health Sciences Center
Dissertation Title: CDC28 Mediated Apoptosis During T Cell Development
Thesis Advisor: Dr. Terence Potter
Research Interests: T cell response to influenza virus and the effect of the nervous system on this response
Current Position: Postdoctoral fellow at the Laboratory of Viral Diseases, National Institute of Allergy and Infectious Diseases, NIH

Maria McClure, Ph.D.
mncclure@ucdenver.edu
Institute: University of Colorado Health Sciences Center
Dissertation Title: Endocytosis of a Novel Autophagic Death Pathway in Cerebellar Purkinje Neurons that is Regulated by Death Receptors and Neurotrophins
Thesis Advisor: Dr. Kim Hande
Research Interests: The role of autophagy and growth factor signaling pathways in neurodegenerative disease
Current Position: Postdoctoral fellow at the Institute for Behavioral Genetics, University of Colorado, Boulder

Meet the New Ph.D.s of SACNAS

Enrique Alvarez, Ph.D.
Institute: University of Colorado Health Sciences Center
Dissertation Title: Characterization and Expression of the Benzene Family Gene in Humans, Mice, and Rats
Thesis Advisor: Dr. Curt Freed
Research Interests: Stem Cell / Gene Current Position: Medical student at University of Colorado Health Sciences Center

Stephanie Atencio, Ph.D.
Institute: University of Colorado Health Sciences Center
Dissertation Title: The Major Murine Lupus Susceptibility Locus NR4A2 Mediates B Cell Defects Required for IgG Anti-Nuclear Autoantibody Production in Mice Lupus
Thesis Advisor: Dr. Brian Kotzin
Current Position: medical student at University of Colorado Health Sciences Center

Donald Benn, Ph.D.
dbenn@nmsu.edu
Institute: Department of Biochemistry, New Mexico State University, Las Cruces
Dissertation Title: Expression of Acanthamoeba actin; (tac) Polyomavirus in a Gene Variants in Recombinant Yeast Hosts
Thesis Advisor: Dr. Glenn D. Kuehn
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Current Position: Research assistant, New Mexico State University, Las Cruces

Kristie Grebe, Ph.D.
Institute: University of Colorado Health Sciences Center
Dissertation Title: CDC28 Mediated Apoptosis During T Cell Development
Thesis Advisor: Dr. Terence Potter
Research Interests: T cell response to influenza virus and the effect of the nervous system on this response
Current Position: Postdoctoral fellow at the Laboratory of Viral Diseases, National Institute of Allergy and Infectious Diseases, NIH

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SACNAS Receives 2004 Presidential Award for Excellence in Science, Mathematics, and Engineering Mentoring (PAESMEM)

On May 16, 2005, the White House announced that the Society for Advancement of Chicano and Native Americans in Science (SACNAS) is among the recipients of the 2004 Presidential Award for Excellence in Science, Mathematics, and Engineering Mentoring (PAESMEM), a program supported and administered by the National Science Foundation (NSF). Each award includes a $10,000 grant for continued mentoring work.

In the award, the NSF recognized SACNAS for establishing “an array of mentoring activities at scientific meetings, teacher workshops, and through its own annual conference. It engages in broad partnerships with other professional organizations. The society provides and supports opportunities for students to strengthen their presentation skills, self-confidence and to make connections with scientists. Recently established and expanded student chapters have brought to 2,862 the number of student members, which should broaden the organization’s reach. An ongoing project to develop biographies of Hispanic/Latino and Native American scientists serves as an inspiration to students from these populations.”

PAESMEM honors individuals and institutions that have enhanced the participation of underrepresented groups—such as women, minorities, and people with disabilities—in science, mathematics, and engineering education at all levels. Since its inception in 1996, the PAESMEM program has recognized 87 individuals and 67 institutions. Each year’s awardees add to the widening network of outstanding mentors in the U.S., assuring that tomorrow’s scientists and engineers will better represent the nation’s diverse population.

The 2004 individual awardees are drawn from institutions across the country and represent a variety of professional fields. SACNAS was honored alongside nine individuals and four other institutions with programs directed to Latino and Native American students, women, and minorities in biological sciences and underrepresented groups seeking mathematics doctorates.
The mission of SACNAS is to encourage Chicano/Latino and Native American students to pursue graduate education and obtain the advanced degrees necessary for science research, leadership, and teaching careers at all levels.
## Financial Report

**Support and Revenue**

<table>
<thead>
<tr>
<th>Source</th>
<th>2004</th>
<th>2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program services</td>
<td>$1,712,312</td>
<td>$1,377,010</td>
</tr>
<tr>
<td>Administration</td>
<td>$654,224</td>
<td>$729,502</td>
</tr>
<tr>
<td>Fundraising</td>
<td>$12,620</td>
<td>$12,024</td>
</tr>
<tr>
<td>Conference registration &amp; sponsorships</td>
<td>$914,315</td>
<td>$729,502</td>
</tr>
<tr>
<td>Other program income</td>
<td>$914,315</td>
<td>$729,502</td>
</tr>
<tr>
<td>Net unrealized investment gains (losses)</td>
<td>$12,327</td>
<td>$12,024</td>
</tr>
<tr>
<td>Interest and miscellaneous</td>
<td>$54,721</td>
<td>$7,854</td>
</tr>
<tr>
<td>Total support and revenue</td>
<td>$2,693,978</td>
<td>$2,296,695</td>
</tr>
</tbody>
</table>

### Income Distribution

- **Program services**: 72%
- **Administration**: 27%
- **Fundraising**: 1%
- **Conference registration & sponsorships**: 34%
- **Other program income**: 9%
- **Net unrealized investment gains (losses)**: 0.5%
- **Interest and miscellaneous**: 2%
- **Total**: $2,693,978

### Expenses

<table>
<thead>
<tr>
<th>Category</th>
<th>2004</th>
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<tbody>
<tr>
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<td>$2,296,695</td>
</tr>
</tbody>
</table>

### Change in Net Assets

- **2004**: $258,656
- **2003**: $56,166

### Net Assets

- **2004**: $1,017,865
- **2003**: $703,043

### Support and Revenue Income Distribution

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- **Administration**: 27%
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- **Other program income**: 9%
- **Net unrealized investment gains (losses)**: 0.5%
- **Interest and miscellaneous**: 2%
- **Total**: $2,693,978

### Liabilities and Net Assets

- **2004**: $1,362,927
- **2003**: $795,060

### Notes

SACNAS’ financials are independently audited by Berger/Lewis Accountancy Corporation.

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## Board of Directors

**EXECUTIVE BOARD**

- Luis Haro, Ph.D., President
- University of Texas, San Antonio
- Marigold Linton, Ph.D., President-Elect
- University of Kansas
- George Negrete, Ph.D., Secretary
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National Science Foundation

Aaron Velasco, Ph.D.

University of Texas, El Paso

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- Mirlam A. Nuño
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**EXECUTIVE DIRECTOR**

Refugio Rochin, Ph.D.
SA CNS PRESENTS
AT THE INTEL
INTERNATIONAL SCIENCE & ENGINEERING FAIR

By Rocío Ruiz

For many students, the passion for science is sparked by how plants grow in different kinds of light or how an environmental issue in their neighborhood may affect the health of their family and community. Although the passion may be sparked, many schools may not have the available resources or time to give students the freedom to explore their scientific questions.

The Intel International Science and Engineering Fair (ISEF) Outreach Program gives schools with limited resources the ability to foster scientific inquiry in their students. The after-school program exposes students to research methodology, inquiry-based learning activities, science careers, and science mentors. This year alone, over 12,000 middle school students from Latino and Native American communities participated in the program over the course of seven months, and approximately 400 students were invited to present their research on May 12, 2005, at this year’s Intel ISEF in Phoenix, Arizona.

Dr. Eugenia Echols, an education program manager at Intel and coordinator of the outreach program’s event, invited SACNAS to present to the 400 mostly Native American and Latino middle school students in attendance. Dr. William Y. Vélez, a past president of SACNAS and professor of mathematics at the University of Arizona, gave the keynote address, and a college admissions officer and members of the SACNAS chapter from Arizona State University in Tempe spoke to the students about the benefits of attending college.

SACNAS was honored to have the opportunity to work with such a wonderful program and talented students. We hope from our presentation that the students learned that science and education go hand in hand—and that SACNAS can help nurture them along their way to becoming scientists. ■

Race Ruiz is the SACNAS K-12 Education Program manager.

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Race Ruiz is the SACNAS K-12 Education Program manager.
Russell Middaugh have assisted two graduate students in my lab. My research involves studying the structure and function of biological macromolecules, such as proteins and viruses, for their effectiveness to treat various diseases and conditions. Currently, I am studying the stability of the protein bovine serum albumin (BSA) when it is adsorbed to an aluminum hydroxide adjuvant in solution. I also plan to continue my research by examining their properties when they become stabilized. The purpose of this study is to evaluate the stability of the stabilizers. The research is important to our community since vaccines are used to immunize individuals against many infectious diseases. The process is complex as an interrelationship between intestinal bacteria and enteric enzymes exists. Unfortunately, the mechanism associated with this process is not fully understood. Therefore, one of our main objectives is to develop a model, using two common intestinal microbes, Enterococcus faecalis and Clostridium perfringens, that can help us better understand the interrelationship between intestinal bacteria and disease development.

Why did you choose to pursue a research career in microbiology? I am a Native American (Navajo), born and raised in the Four Corners region region. A common characteristic of many Native Americans is that they are shy. I was certainly not an exception. I was shy and reserved in college and did not interact much with my professors. But there was one professor (Dr. Robert Ellis), a microbiologist, I felt comfortable with. He grew up in Wyoming, near the Wind River Reservation, and his familiarity with Native Americans is that allowed me to develop a trust in him. Eventually I became a graduate student in his laboratory at Colorado State University. There I learned how to combine my curiosity and interest in solving mysteries with my interest in human health.

What advice would you give a student who is considering a research career in academia? My advice would be to choose academe as a career if you are a person with multiple talents and interests. I have developed a career that equally balances family, research, teaching, and service. After tenure, it is possible for a professor to pursue his or her own interests. Many research professors start their own businesses based on their expertise. For those who like to write and publish, there is an avenue to do so as a professor. If you desire to participate in today's issues regarding medicine, education, or the economy, professors are often asked to sit on federal advisory councils. If you have media interests, many professors are asked to contribute as reporters, correspondents, etc. The freedom given to professors makes our careers very flexible and exciting and what you choose to do with this freedom is up to you.

SACNAS ELECTIONS

Bring your leadership and vision to the SACNAS Board of Directors! Individuals are encouraged to nominate themselves or others to run for a position on the SACNAS Board.

Available Positions

President-Elect
1 position open; four-year term of service.
General Board Member
3 positions open; three-year term of service.
Student Board Member
1 position open; two-year term of service.

For more information:
Email: info@sacnas.org
Website: www.sacnas.org/electboard.html

LATINA MARTIN, PH.D.

Discipline: Chemistry
Career Stage: Undergraduate Student
Institution: University of Kansas
Research Abstract: I have been involved in undergraduate research at the Pharmaceutical Chemistry Laboratory at the University of Kansas for at least three years. One particular area of pharmaceutical research we are interested in involves the chemistry of biocatalysts, such as proteins and viruses, for their effectiveness to treat various diseases and conditions. Currently, I am studying the stability of the protein bovine serum albumin (BSA) when it is adsorbed to an aluminum hydroxide adjuvant in solution. I also plan to continue my research by examining their properties when they become stabilized. The purpose of this study is to evaluate the stability of the stabilizers. The research is important to our community since vaccines are used to immunize individuals against many infectious diseases. The process is complex as an interrelationship between intestinal bacteria and enteric enzymes exists. Unfortunately, the mechanism associated with this process is not fully understood. Therefore, one of our main objectives is to develop a model, using two common intestinal microbes, Enterococcus faecalis and Clostridium perfringens, that can help us better understand the interrelationship between intestinal bacteria and disease development.

How have you been involved in voluntary work? My work with the American Chemical Society (ACS) has been an amazing and seemingly miraculous life transformation. Thank you, SACNAS!

ANN AURELIA LOPEZ, PH.D.

Discipline: Environmental Science
Ethnicity: Multiracial
Career Stage: University of California, Berkeley, Department of Environmental Science, Policy, and Management, Society & Environment Division
Research Abstract: My interdisciplinary research addresses the human scale of one strand of current worldwide migratory flows with a focus on the biocatalytic migration of the farmer worker community from the farms of west central Mexico to employment in central California’s corporate agribusiness enterprises. I am currently working with 33 farm worker families in Watsonville and Salinas, California, as well as 22 farm and their farm families in the states of Jalisco, Michoacan, and other nearby states and communities where the small-scale sustainable farming of the traditional corn, bean, and squash intercrop was once standard farming practice.

In what ways is this research important to our communities? This research is critical to the farm worker community. Mexican immigrants today are routinely blamed in the American media and elsewhere for entering the U.S. as undocumented workers. However, what is never mentioned is the role that U.S.-supported trade policies, including NAFTA, and transnational corporations play in forcing small farmers to abandon their lands and families in Mexico as a survival imperative. They enter the U.S. as economic and political refugees. The social costs of this massive exodus from the rural Mexican countryside, along with the human rights violations at every juncture of the migratory circuit, have created inordinate pain, loss, and human suffering in this community.

How have professional societies been important to your development as a scientist? I attended a SACNAS conference in Albuquerque about 11 years ago hoping to network with other environmental science educators/researchers. I never met any other environmental scientists, but there was one professor (Dr. Robert Ellis), a microbiologist. I felt comfortable with him. He grew up in Wyoming, near the Wind River Reservation, and his familiarity with Native Americans is that allowed me to develop a trust in him. Eventually I became a graduate student in his laboratory at Colorado State University. There, I learned how to combine my curiosity and interest in solving mysteries with my interest in human health.

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Resource Listings

SACNAS News Resource Listings provide the minority scientific community with access to the most current career advancement opportunities. To place a paid advertisement in the next edition of the Resource Listings, contact marketing manager Tanya Beat at tanya@sacnas.org or call toll free, 877-SACNAS-1, ext. 241.

Cellgata-Pamplite Grants for Alternative Research

Grants identify and support efforts that promote, develop, refine, or validate scientifically acceptable and animal alternative methods to facilitate the safety assessment of new chemicals and formulations. The maximum award will not exceed $40,000. Scientists at any stage of career progression may submit a proposal.

Application Deadline: August 1, 2005

Scholarship & Fellowship Opportunities

Bell Labs Graduate Research Fellowship Program

Bell Labs’ fellowship program is designed to increase the number of minorities and women in the sciences. Fields include full-time doctoral studies in chemistry, communications science, computer science, engineering (chemical, computer, electrical, industrial, or mechanical), information science, materials science, mathematics, operations research, physics, or statistics.

Award: full tuition plus $17,000 stipend
More Information: www.bell-labs.com/careers/fellowships/index.html; or coopgraduate@lucent.com

HSF/Pfizer, Inc., Fellowship Program Hispanic Scholarship Fund

Annual $10,000 fellowship awards and paid summer internship aimed at assisting Hispanic American graduate and undergraduate students in completing their higher education.

More Information: www.hsf.net/scholarship/programs/pfizer.php; or info@hsf.net

Sponsorship Opportunities

2005 SACNAS National Conference

Sponsors Receive Prominent Acknowledgment
Recognition of sponsorship at event, in the conference program and on the SACNAS website. For further information about these sponsorship opportunities, please contact Tanya Beat, marketing and exhibits manager: tanya@sacnas.org

2005 SACNAS National Conference Sponsorship Opportunities

$2,000 Laptop Computer for Exhibit Hall Raffle: encourage participation in the Exhibit Hall and help one lucky attendee receive a premium computer to support higher science career.

$2,500 Transportation for K-12 Enrichment Activity: three charter busses will transport 150 K-12 teachers from the Colorado Convention Center to the National Renewable Energy Laboratory (NREL) in Golden, Colorado.

Description: At NREL (www.nrel.gov), participating teachers will participate in multiple hands-on curriculum activities to enhance their content knowledge and inquiry-based methodologies.

$4,500 Breakfast for 300 9th and 10th Graders and Their Families: support the participation of the University of Colorado, Boulder Pre-College Development Program (PCDP) attending SACNAS’ Community Day in the Exhibit Hall.

Description: The PCDP (www.colorado.edu/asc/pdp) is an academic enhancement program designed to motivate and prepare first-generation and underrepresented students in pursuit of their higher education goals.
Are you a SACNAS member? Join SACNAS—the nationally recognized minority science organization. Enhance your career. Become part of a community that is advancing present and future generations of minority scientists, mathematicians and engineers.

Membership Benefits:

Career Advanceement
- Valuable print and web publications:
  - SACNAS News presents current issues within the minority scientific community and in-depth career and academic advancement resources.
  - Biweekly e-nouncements feature the most timely information on current events, grant and internship opportunities.
- Mentorship and networking: connect with fellow members through online community activities and tools, including:
  - SACNAS Minority Postdoc Community
  - National MentorNet program
  - Personal website in the Member Home Pages
- CV enrichment: highlight your membership

- develop presentation skills at the annual conference
- become eligible for research and mentorship recognition through the SACNAS Distinguished Awards and the Student Poster and Oral Presentation Awards

Active Community Involvement
- Lifelong relationships: actively engage in informal or formal mentoring activities
- Join a network of science teachers, researchers, and students who are changing the face of science
- Give back through the SACNAS Endowment Fund
- Organizational leadership: make your voice heard through the opportunity to serve as a Board Member and vote in the annual Board of Directors elections

Financial Support
- Reduced registration: receive special member rates for the SACNAS National Conference

Scholarships:
- Student, postdoc and junior faculty members are eligible to apply for financial assistance to attend the annual conference.

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City State Zip
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  - $45 K-12 Teacher
  - $45 Postdoc
  - $65 Professional
- Lifetime Membership
  - $500 Life Member
  - $1,000 Friend of the Society

Donation
- $50
- $250
- $500
- $100
- $50
- $20
- Other

Sponsorship
- Raffle
- K-12 Enrichment
- Student Breakfast
- Teacher Scholarships