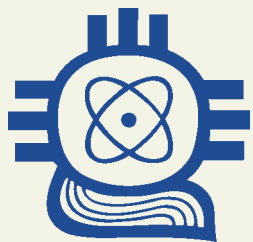
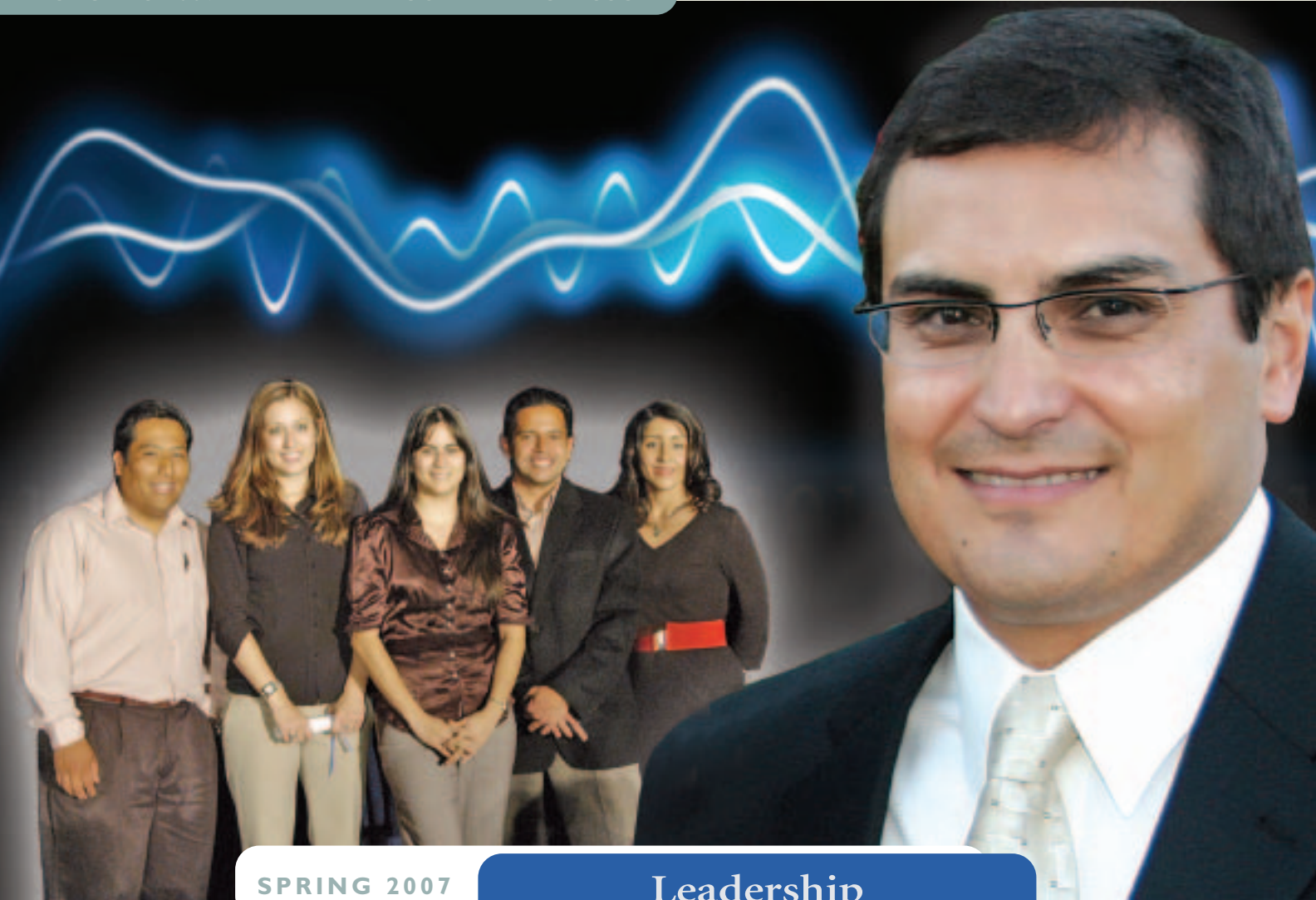


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of Chicanos and Native  
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# SACNAS NEWS

SACNAS 2007 PRELIMINARY CONFERENCE ISSUE



SPRING 2007

Leadership

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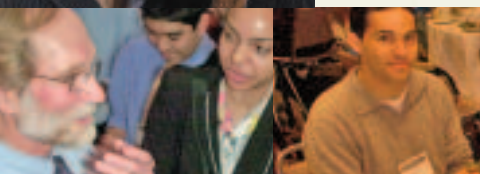
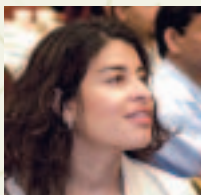
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#### COVER PHOTOS:

**Foreground:** Beginning in 2000, Dr. Aaron Velasco (president of SACNAS since January 2007) provided leadership to SACNAS' Student Presentation Committee helping to reenvision the mentoring of student presenters at the annual conference.

**Background:** Several of the graduate students recognized for their exemplary oral presentations at the 2006 SACNAS National Conference.

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# Letter from the President

Aaron Velasco, Ph.D.



## LEADERSHIP AND COMMUNITY: DON'T SHY AWAY FROM OPPORTUNITIES

As an academic scientist, it is not unusual for one to get asked to serve on university committees, science organization review panels and editorial boards. However, as a minority scientist in a field especially devoid of minorities, I frequently get asked to serve on numerous education and outreach committees on top of these other requests. This has been both a curse and an exceptional opportunity to grow as a leader.

Serving the community is a requirement of life as an academic. In my career, I have had to develop a balance between those commitments, my teaching duties and my research activities; but, getting the balance right has been challenging. Many times, I can be my own worst enemy by not saying a key, small and important word: No. Service can get in the way of productivity, in which case service can be a detriment to young scientists. Since the extra calls to serve often only fall disproportionately in the laps of underrepresented scientists, they can create an unfair burden for us.

So, don't be afraid to ask tough questions and don't be afraid to say no if the answers don't match your goals. For example, when I am asked to serve on a committee, I ask, "What is the task of the committee? What are the goals? Will the committee have any impact on issues that are important to me? What is expected in terms of time and commitment?" Although this may sound selfish, you must guard your time if you are to succeed in science!

At the same time, for me growth as a leader has stemmed from the various service opportunities that might not have been available had I not been an active researcher who continues to publish, someone willing to serve the science community, and also a minority. Through frequent service, I have realized important aspects of being a leader, including to never be afraid of expressing your opinion, to always listen to what people have to say, and to be very protective of your time.

Usually, I am the only minority on panels and committees. This contrast has helped me value diversity and see my difference in cultural background as an incredible strength. I regularly have a different perspective (as valid as anyone else's) that enriches discussions and decisions.

I have also found that serving my science community allows me to serve my SACNAS community, in addition to helping me attain my personal goal of cultivating my leadership skills. Recently, a colleague noted that many in her field do not have the skills necessary to engage with funding agencies that set scientific direction. They rely on her to do this—because she has served on many committees and honed her leadership skills. Now, funding agencies and the science community in her field look to her to help set priorities and new directions. The influence she has gained is another example to me of what can result from taking full advantage of the opportunities outside the lab and classroom.

So, say yes when it is right for you. Go serve, and grow those leadership skills!

A handwritten signature in black ink, appearing to read "Aaron Velasco".

Aaron Velasco, Ph.D.  
SACNAS President

BY LIN M.  
HUNDT

# PROFILES OF LEADERSHIP IN ACTION

## CONTEMPLATE THE WEALTH OF LEADERSHIP MODELS, STYLES AND SKILLS

the lists of key characteristics of successful leaders, and you begin to see that there are nearly as many ways to consider leadership as there have been leaders throughout history to make use of them. One may also be struck by a deep parallel between the professional skills requisite to the pursuit of science and that which is defined as leadership development.

There are enough forms of leadership, including variations on variations of styles, that time and research have been devoted to creating something approaching a leadership taxonomy. Some leadership scholars classify the degree and manner in which those being led are involved in decisions and problem-solving. They grade models along a spectrum from leader-down styles, such as autocratic and bureaucratic leadership, to team-based strategies, including democratic and consensus decision-making.

Others describe the purpose of leadership using a continuum from goal-focused to people-focused, exploring the level of importance placed on the task or outcome of those being led versus that placed on the development of the individuals in the team. Yet more scholars debate the role and position (relative to the team) of the leader; the extent to which the leader's charisma is integral to the inspiration and/or success of the team, and the status the leader receives as a result of the team's activities.

In the end, however you define leadership, whatever your personal style may be, and what-

ever form of research, program development, management or policy career you pursue, it is likely that you will encounter the term rather frequently. Be assured, as a scientist you can expect to be called upon to employ what leadership-related skills you possess in a variety of situations and circumstances.

In acknowledgement of the individual nature of leadership and the tendency for leaders to pull from many schools of thought, you are invited to meet several members of the SACNAS community who, though in several cases do not see themselves as leaders, have reflected on leadership in their own lives—an act that many theorists rank as key to development as a leader.

### Thomas Windham, Ph.D.

Community Psychologist  
Senior Advisor for Science and Engineering Workforce  
National Science Foundation

**Degrees:** Ph.D., Psychology, University of Colorado at Boulder, 1975; Ed.S., Administration, Supervision, and Curriculum Development, University of Colorado at Denver, 1995

**Background:** African American, Yamasee, Seminole

**Contact:** [twindham@nsf.gov](mailto:twindham@nsf.gov); [twindham@ucar.edu](mailto:twindham@ucar.edu)

*"We all have the potential to develop and refine [leadership] skills or practice to become more effective leaders and more responsible citizens."*

—Thomas Windham

**SACNAS NEWS:** *How do you define leadership?*

**THOMAS WINDHAM:** Leadership for me is the practice of influencing behavior and in behavior I include thinking. So, leadership is a behavior or a set of behaviors that encourage, hopefully, a desired response. When we're talking about

leadership, we're really talking about leadership as an intentional act, or intentional leadership, where we intend to lead. In leading one takes a position in front where the behavior of the leader is intentionally organized and deliberately executed to bring forth a desired state of affairs.

**SN:** *Why is leadership important in your career, or anyone else's for that matter?*



**LEFT**  
*Dr. Thomas Windham, formerly served as director of the Significant Opportunities in Atmospheric Research and Science (SOARS) program.*

**TW:** It's my belief (and this isn't an original thought of mine) that leadership is everybody's business and that everyone is a leader. The question or the challenge is not encouraging people, including myself, to become a leader but to acknowledge that we all are. As thinking, sentient beings, [we] observe, come to know our behavior and our potential, so that we can lead in a fashion that is consistent with whom we think we are, what we understand the world to be and how we want to organize our behavior in it.

**SN:** *How does that relate to your current work at NSF?*

**TW:** My job is to identify the opportunities, identify the people, recognize their vision, and then to articulate, in some way, that vision. So, the school of thought that I use is "inspiring a shared vision." It's not my vision; it's recognizing their leadership and inspiring them to engage in behaviors that sustain the vision through the practice of behaviors that get them closer to achieving that vision.

**SN:** *Have you had the opportunity to formally study leadership?*

**TW:** I did; I also had the benefit of people who were willing to engage me in that practice. In fact, one of the things that helped me a lot was *teaching* leadership. I was an associate adjunct professor at the Naropa Institute in Boulder for their graduate program in environmental science. I accepted the challenge of crafting a graduate course called "The Art and Ethics of Leadership." When you teach, you learn more than your students. So, I had that opportunity to really work from Kouzes and Posner [*The Leadership Challenge*] with a class. I like it because they talk about five practices: challenging the processes, inspiring a shared vision, enabling others to act, modeling a way and encouraging the heart. The second text that I used was a book called *Martin Luther King Jr. on Leadership [Inspiration and Wisdom for Challenging Times]* by Donald T. Phillips. That I found to be very compatible with Kouzes and Posner, and it helped me to bring in the piece on ethics.

**SN:** *What has encouraged your development as a leader?*

**TW:** That's been happening for me all my life. First of all, I have to credit my parents and the community that I grew up in. As I was developing myself, I assumed leadership positions because I was the one most willing to step out and do something. I'm blessed that I

grew up when I did because I'm a child of what the nation refers to as the "civil rights movement," but what I refer to as the "human rights movement." I was surrounded by people engaged in struggle; with that being said, you get mentored. I had the benefit of being around some very significant, well-known, successful people and also working with students and groups in the protest movement.

**SN:** *If everyone comes to leadership with a varying amount of skill and ability, how does one develop further?*

**TW:** Well, as a psychologist, I would say we all have the capacity for leadership. [We develop] through relevant experience. For me, one of the relevant experiences was the experience of growing up as I did, during the 1950s. There's a slogan that Peter Osorio came up with—"C plus E yields A: Capacity coupled with relevant Experiences supports and sustains Ability." Ability is being able to act on an opportunity when that opportunity presents itself.

**SN:** *What suggestions would you make to SACNAS students?*

**TW:** I'd say developing your expertise should be a higher priority than saving the world. That's not to say you can't participate in the salvation while you're developing [your expertise]. Once you develop your expertise, not only can you lead more effectively, but you'll have access to resources that you wouldn't have had access to if you didn't.

**SN:** *Your final words on leadership?*

**TW:** Have fun, be purposeful, be thoughtful, be moral, be ethical.

## Erika T. Camacho, Ph.D.

Applied Mathematician

Assistant Professor of Mathematics

Loyola Marymount University

**Degree:** Ph.D., Applied Mathematics, Cornell University, May 2003

**Background:** Mexican American

**Contact:** [ecamacho@lmu.edu](mailto:ecamacho@lmu.edu)

**SN:** How did you get to where you are now in your career?

**ERIKA CAMACHO:** I grew up in East Los Angeles, California, and thought that my surroundings were the norm in the U.S. Having inspiring mentors, such as Jaime Escalante (from the movie *Stand and Deliver*),

helped me expand my horizons and realize that I could do much more than just finish high school.

I knew from the time I left home that I wanted to do something to help correct the extremely unfair social and economic inequities that many of us experience on a

daily basis. I knew that one way of giving

back was to empower disadvantaged populations by helping them attain an education. However, it wasn't until I attended the Mathematical and Theoretical Biology Institute (MTBI) that I experienced firsthand a way to do this.

MTBI empowers individuals through a combination of great mentoring and an intensive, collaborative environment where a student can reach his or her full potential. The tireless dedication of its co-founders, Drs. Carlos Castillo-Chavez and Herbert Medina, inspired me to follow in their footsteps. Helping students in their careers—by providing a solid mentoring experience and research opportunity—is what I have set out to do with AMSSI.

**SN:** You co-founded the Applied Mathematical Sciences Summer Institute (AMSSI). What is that program's purpose?

**EC:** Less than 4 percent of the Ph.D.s in mathematics awarded over the last 15 years have gone to underrepresented minorities. One of the main reasons is that the traditional definition of someone who has "Ph.D. potential" fails to take into account the struggles that many underrepresented groups continue to endure. Many of the underrepresented students that make it into graduate school find themselves in a foreign environment and without

the support network needed to succeed.

AMSSI gives students an intensive research experience: a taste of the workload encountered in graduate school in the mathematical sciences, but within a fully supportive environment. We expose them to both academic and industry leaders who, together with their fellow AMSSI students, provide a network of support from which they can draw for

many years.

**SN:** How have you developed as a leader?

**EC:** In high school and college, I realized that so many people (classmates, teachers, civic leaders, etc.) did things just for the glory of the situation without always taking the greater good of the people into account. Growing up with so many people in my

community suffering made me keenly aware of the need to do something to impact my community. I had key mentors, leaders in my community, and they gave me the opportunity to work closely with them. This allowed me to learn many different aspects and styles of leadership. Their passion and desire to help others definitely was transmitted to me. Through trying to make a difference, I took on more and more leadership positions and, thus, developed these skills.

**SN:** How have such skills contributed to your career?

**EC:** [Leadership] skills have assisted me in being able to recognize the strengths and needs of those around me. Understanding those with whom I am working allows me to help bring them together and create a sense of community. Within this community, individuals are far more transparent and willing to share their views. I feel it is essential that those involved feel a sense of ownership of whatever project we're working on. In this type of environment, all individuals involved thrive and feel fully connected to the objectives and the process. Incorporating the feelings and opinions of individuals that my decisions affect and using this to

shape any action is probably the most significant skill.

**SN:** What are your future career goals?

**EC:** While I see myself continuing with AMSSI for a number of years and hopefully continuing to increase the number of underrepresented students pursuing higher degrees, I ultimately see myself working in the area of public policy. There are too many people out there who will never even have the opportunity to pursue an education because of financial hardships. It is sad to see so many young people with so much untapped potential, and our current system continuing to fail them. I want to change this inherent unfairness in the system.



**"It is a social injustice to just continue with the status quo while so many people struggle to make ends meet."**

**—Erika T. Camacho**



## C. Russell Middaugh, Ph.D.

Pharmaceutical Chemist

Takeru and Aya Higuchi Distinguished Professor  
University of Kansas

**Degree:** Ph.D., Biochemistry, Cornell University Graduate School of Medical Sciences, 1978

**Background:** Caucasian, Arapaho, Iroquois

**Contact:** (785) 864-5813



**SN:** *How would you describe your view on leadership?*

### C. RUSSELL MIDDAGH:

Leadership to me implies an undue influence of one individual on many others. I am much more comfortable with the word “facilitator”—someone who is going to help people, but not necessarily be out in front of them. I want to be there

with them. Often that means that much of what happens [in the lab] doesn’t come directly from me, but comes from the other individuals. I just try to give them the opportunity to do the things that their talents and interests lead them to do.

**SN:** *How did you come to this understanding of leadership?*

**CRM:** I think every day you can see the destructiveness of leadership if you look at the political situation in this country. The individuals who portray themselves as leaders are often not people who are performing functions that are productive to the society. The word “leader” implies a separation between the leader and the group that’s led; that’s the implication of the term, and I don’t like that.

**SN:** *However, you are, pardon my usage, considered a leader in your field. Why do you think others see you in that way?*

**CRM:** You know what that often means? It means that you are old. I’m serious, that’s literally what it means. It means you have been around a long time, acquired a lot of experience, and therefore they attach this word to you. The word has implications that, I think, are not necessarily accurate.

**SN:** *Still, you have gained a reputation as a successful scientist. How has that come about?*

**CRM:** Like anyone else, anywhere else, I would say that my reputation as a scientist probably arises from several sources. One is the suc-

cess I have had in industry in bringing vaccine products to market. It probably also comes just because we communicate our research on a very regular basis; we have been publishing anywhere from 10 to 25 papers per year. I am the associate editor of one of the better journals in the field, so some influence is probably exerted through that position as well.

**SN:** *Why is your research program important to you?*

**CRM:** I am very interested in my research having an impact on human health. I take great pride in the fact that I was actually in charge of the vaccine formulation and delivery group at Merck when the vaccines for human papillomavirus, rotovirus, shingles and many other agents were developed. And now we work on many other important vaccines; we are trying to help create a more stable measles vaccine. We work on lots of different vaccines for things like anthrax and botulinum toxin, noroviruses and valley fever.

**SN:** *How many people work in your lab?*

**CRM:** At any one time, we have a pretty much equal number of graduate students and postdocs, and it’s usually 10 to 15 in either group.

**SN:** *What makes your lab a unique experience for them?*

**CRM:** Usually most people in our lab have at least two independent projects that they are working on. In most laboratories, people are working on a single project. The other big difference between my lab and most other academic laboratories is that the majority of the people who work in my lab—I would say at least 75 percent—go into industry rather than academia.

**SN:** *How does your lab impact those scientists in training?*

**CRM:** We really do train and very specifically... We try to make sure that they have a fundamental skill-set in the things that they are going to be doing, that they understand the goals, and they are able to work as part of research teams.

**SN:** *How can SACNAS members develop their ability to function as a member of a team and become a team facilitator?*

**CRM:** First and foremost, become a member of a team or multiple teams so that you learn the dynamics and how you function most comfortably as part of a team. Especially crucial is that you take advantage of the team environment to learn about what other people do. If you find out how your work fits in with everyone else’s, you can perform your part more effectively. You don’t just walk in and do what you do and walk out. You try to understand what the other members of the team are doing, and learn about it.

“I have what some people might think is a radical view of leadership. I don’t believe in it.”  
—C. Russell Middaugh

**SN:** *What skills help one work successfully as part of a team?*

**CRM:** I'm talking about scientific teams, so usually someone will be skilled in a particular area of experimental methods or solving specific types of problems. Sometimes the skills are more fundamental, [such as] the ability to deal with outside groups in a productive way. No doubt communication skills are fundamental to anything and everything. Improvement in communication skills in whatever you do in life probably is one of the single most important things one can do.



## **Idalia Ramos, M.S.E.E.**

**Materials Scientist**

**Associate Professor**

**Program Director, Penn-UPR Partnership for Research and Education in Materials (PREM)**

**Program Director, ADVANCE (Increasing the Participation and Advancement of Women in Academic Science and Engineering Careers) Institutional Transformation Program University of Puerto Rico in Humacao**

**Degree:** M.S.E.E., University of Pennsylvania, 1987

**Ethnicity:** Puerto Rican

**Contact:** iramos@mate.upr.edu

**SN:** *What is the importance of leadership abilities?*

**IDALIA RAMOS:** If you develop leadership qualities, you can increase the impact of your work and train better scientists for the future. When you are doing research, most often you have to work with a group of people. A researcher with leadership qualities will accomplish more than one who doesn't have those qualities.

**SN:** *How do culture and language affect leadership?*

**IR:** I don't know if I have the expertise to answer that, but I can tell you that there are some cultural facts that I have to work with that are different from what other leaders work with. For me, as a leader in Puerto Rico, in a Hispanic environment, the thing that I have to consider the most is the role of the family. Practically, to work here with

the students (and even with the faculty), you have to consider family issues, you have to include that in the mentoring.

**SN:** *What are the differences between men's and women's leadership styles?*

**IR:** I listen to these debates that say that women are more collaborative—women will use another method, another style, to convince workers or students. They will be more soft than men. I'm really not sure because I haven't seen any people more competitive than women. If you let women reach influential positions, we can be as competitive as men; the problem is that we haven't been allowed to compete for equal positions.

**SN:** *What have you been able to accomplish as a leader at the University of Puerto Rico (UPR)?*

**IR:** At UPR, I have been a leader in developing new educational and research programs in the area of materials science. PREM is a partnership between UPR and the University of Pennsylvania to increase minority participation in materials research. As a result the work I have done in collaboration with other faculty from Humacao, we have also improved the education and research infrastructure, and increased opportunities for students. I should mention that this is an undergraduate institution, so it took a lot of work to develop a strong research program involving undergraduates. In addition, I think I have been a leader in increasing the participation of women with the ADVANCE program.

Through PREM and ADVANCE, we have been able, in both Puerto Rico and the U.S., to increase the visibility of Humacao as a school that excels in materials research and education, and in promoting women in science.

**SN:** *What has been the impact of ADVANCE?*

**IR:** Through ADVANCE, we were able to use funding from NSF to increase the number of women on the faculty, to advance the positions of women in the science faculty. In addition to recruiting more women ... in terms of the qualifications for new recruitment and research produc-

**"If you are a good leader, if you have leader qualities, you can convince people that your approach is the better and that they should work with you in reaching a specific goal."**

**—Idalia Ramos**

“Do not wait for leaders. Do it alone, person to person.”

—Mother Teresa

tivity, there has been a significant increase—in publications, research projects, external funding. And the biggest achievement of ADVANCE has been in the number of women obtaining tenure.

**SN:** And PREM?

**IR:** In PREM what we have is one-to-one interactions between UPR faculty and University of Pennsylvania faculty. We go there for summer programs, they come here in the academic year to visit ... and we communicate through video conferencing almost weekly. In addition to support for research, we have support for the students to participate in seminars, video conferences and training in preparing presentations and publications and applying for graduate school. As part of the education program, we also have a summer research program for high school students.

**SN:** How did you get your start as a leader?

**IR:** Well, ever since I can remember, I have been involved in something. My parents were activists in many community activities, so I was always involved in something. As a student at UPR, I was involved in undergraduate research and student organizations. My undergraduate research mentor was so important for me, in leading me to go to graduate school, in having a leadership role.

**RIGHT:** Dr. Idalia Ramos (center) with undergraduate students Neliza León (left) and Anamaris Meléndez (right) at the 2006 International Conference on Nanscience and Technology in Basel, Switzerland.



**SN:** What did your parents and mentors teach you?

**IR:** Probably the main thing I learned from them is that you have to become involved in issues. They helped me develop skills, problem-solving skills, and [understand] the importance of developing communication skills. This is something that was very difficult for me because I didn't like speaking in public. But both my parents and Professor Jorge Santiago pushed me all the time: do this, do that, go and talk. The thing is, after so many years, he's still doing that.

**SN:** What do you push your students to do?

**IR:** They definitely have to become involved with undergraduate research and participate in organizations like SACNAS, because they will establish a relationship with a mentor; they will develop communication skills, they will go to conferences to present their work, they will establish contacts that eventually may lead to collaborations. That's what I recommend to my students: undergraduate research and professional organizations.

*Lin M. Hundt is a senior editor at SACNAS News.*

## Resources

For information on research on leadership, see the following selected websites:

- Jim Kouzes and Barry Posner, Ph.D., *The Leadership Challenge*  
[www.leadershipchallenge.com/WileyCDA](http://www.leadershipchallenge.com/WileyCDA)
- Donald T. Phillips, *Martin Luther King Jr. on Leadership: Inspiration and Wisdom for Challenging Times*  
[www.donphillipsbooks.com/books/martin-luther-king-jr-on-leadership](http://www.donphillipsbooks.com/books/martin-luther-king-jr-on-leadership)
- Jean Lipman-Blumen, Ph.D., *The Connective Edge: Leading in an Interdependent World*  
[www.achievingstyles.com/leadership/book\\_connective\\_edge.asp](http://www.achievingstyles.com/leadership/book_connective_edge.asp)
- Lisa Marie Portugal, M.A.Ed., “Diversity Leadership in Higher Education”  
[www.academicleadership.org/volume4/issue3/student\\_research/portugal\\_lisa\\_marie/index.html](http://www.academicleadership.org/volume4/issue3/student_research/portugal_lisa_marie/index.html)

For information on the science programs mentioned in the feature article:

- ADVANCE (*Increasing the Participation and Advancement of Women in Academic Science and Engineering Careers*) *Institutional Transformation Program*  
<http://cuhttp://www.upr.clu.edu/~advance>
- *Applied Mathematical Sciences Summer Institute (AMSSI)*  
[www.amssi.org](http://www.amssi.org)
- *Mathematical and Theoretical Biology Institute (MTBI)/Institute for Strengthening the Understanding of Mathematics and Science (SUMS)*  
<http://mtbi.asu.edu>
- *Penn-UPR Partnership for Research and Education in Materials (PREM)*  
[www.upr.edu/~prem](http://www.upr.edu/~prem)

For information on leadership training and development for scientists and students at varying career stages:

- *Commerce Science and Technology Fellowship (ComSci) Program*  
[www.comsci.nist.gov](http://www.comsci.nist.gov)
- *The Leadership Alliance*  
[www.theleadershipalliance.org](http://www.theleadershipalliance.org)
- *Project Kaleidoscope*  
[www.pkal.org/activities/LeadershipInitiative.cfm](http://www.pkal.org/activities/LeadershipInitiative.cfm)
- *UCLA Anderson School of Management—Leadership Suite* Offers four open enrollment programs: African American Leadership Institute; Latino Leadership Institute; Lesbian, Gay, Bisexual, and Transgender Leadership Institute; Women's Leadership Institute  
[www.uclaexced.com/generate.cgi?page=leadership&format=content\\_only](http://www.uclaexced.com/generate.cgi?page=leadership&format=content_only)
- *University of Texas at Austin—Intellectual Entrepreneurship Program*  
<https://webpace.utexas.edu/cherwitz/www/ie/index.html>

# Science Literacy and Community Leadership

By Jenny Kurzweil

**RIGHT**  
Examination of specimens collected in the field is an indispensable element of the Pajaro Valley High School science literacy program.



**DENISE ESTRELLA**, assistant principal at Pajaro Valley High School in Watsonville, California, feels that a lack of science literacy is crippling her community—literally. She says, “The American public doesn’t have enough science literacy to understand basic health information—to think critically about the information a company or the media presents. Students, in particular, aren’t able to cipher through the media and say, ‘Does the company just want us to buy something, or does what they are saying have scientific backing?’”

Ultimately, Estrella believes that the more young people understand science, the more they can help look out for their families and become leaders in their communities. This is no small feat for underrepresented minority youth, whose communities are most at risk for diabetes, obesity and malnutrition, and

whose neighborhoods and reservations are often the most plagued by pollution and environmental degradation.

## A Community “At Risk”

Estrella’s school, Pajaro Valley High, is in the heart of one such community. The Pajaro Valley is one of the world’s largest agricultural centers, growing and processing much of the nation’s strawberries, apples and cut flowers. Almost all of this work is done by the Latino community, reflected by the city’s population demographics: Nearly 70 percent of the population in Watsonville is Latino. (Watsonville is also a young city; almost 34 percent of the population is under 18 years of age.)<sup>1</sup>

This agricultural hub rests on the

shores of the Monterey Bay National Marine Sanctuary, which encompasses a shoreline length of 276 miles and 5,322 square miles of ocean and supports one of the world’s most diverse marine ecosystems.<sup>2</sup> The Pajaro River and surrounding wetlands provide an important segue from land to sea, filtering out pollutants such as nitrogen and phosphorus from fertilizers, slowing down and absorbing excess water during storms, and helping prevent loss of soil from erosion.<sup>3</sup>

Pajaro Valley High is a perfect reflection of both Watsonville’s population and ecological environment. The new school, currently in its second academic year, was constructed on a controversial site adjacent to two wetlands. The students are 91 percent Latino, 47 percent of whom are students in the Migrant Education Program and 68 percent of whom participate in the free or reduced-price lunch program, an indicator of families at or below the poverty level.

## Strategic Convergence

Estrella proudly reports that Pajaro Valley High is using this confluence of the wetlands environment and the composition of the student body to bring science literacy to the fore and create a new generation of community leaders and scientists. She says, “We have a strong belief in equitable educational opportunities for our students. We are mindful of whom our students are, and we aggressively seek out opportunities for

them and push them to succeed.”

This commitment to student success, paired with the California Coastal Commission’s decree that a strong environmental education component be written into the high school’s

charter, has created a setting conducive to science education and leadership development.

“...the more young people understand science, the more they can help look out for their families and become leaders in their communities.”

## Coming Together to Create Science Leaders

Two local organizations, Watsonville Wetlands Watch and the Monterey Bay Aquarium, joined forces with Pajaro Valley High to create a strong hands-on science program to fulfill the mission of the school and model how the combination of hands-on science curriculum and service learning creates an ideal environment for developing leadership skills.

To initiate the collaboration, Watsonville Wetlands Watch formed the Fitz Wetlands Educational Resource Center (WERC), an indoor/outdoor wetlands learning center that contains a visitor center, a classroom and wet lab, a greenhouse and a demonstration native-plant garden. WERC, which opened in March of 2006, offers multidimensional and interdisciplinary programs including the Wetlands Stewards program and the Slough-Based Environmental Education program.

Rachel Garrett, WERC's educational programs director, explains that both the Wetlands Stewards and the Slough-Based Environmental Education programs provide rich opportunities for Pajaro Valley High students. "Wetlands Stewards," Garrett says, "is an after-school middle-school program that provides vertical mentoring opportunities for high school students who work on developing and leading activities for the middle school participants. Activities include establishing a native plant garden at the school, building bird boxes at the wetlands site and leading middle schoolers on field trips through the wetlands."

The Slough-Based Environmental Education program is a teacher-led initiative to develop a place-based, hands-on, integrated curriculum correlated to California content standards. Garrett explains that the curriculum, which has both field and classroom components, helps prepare high school students to serve as mentors to the younger students and is highly interdisciplinary, with lessons

in biology, integrated science, chemistry, environmental science and math, particularly geometry.

The Mar y Campo (Ocean and Land) program is a partnership between Pajaro Valley High and the Monterey Bay Aquarium. Run by longtime SACNAS member Jenny de la Hoz, Mar y Campo connects students to the entire Pajaro Valley watershed through its WATCH (Watsonville Area Teens Conserving Habitats) summer and after-school program. Students are able to choose which ecosystem they want to focus on and then, in groups, they do an in-depth study of either the riparian, wetland or dune zones and create a presentation for each other and members of the aquarium staff. Program coordinator Stewart Jenkins says, "During the summer program, we were barely sitting in the classroom. We were mostly out there getting our hands wet, doing water quality testing and bug sampling. The kids loved it!"

During the year, students pick projects

focused on how to teach people to appreciate the wetlands or the watershed. As in the WERC program, many participants take on a mentoring role to younger students. "For example," Jenkins says, "one group has decided that their audience is fifth graders and they are going to take fifth graders on a series of three field trips into the three areas of the watershed. They are coming up with all sorts of games and activities and working with a number of different professional partners."

### Lessons in Leadership

Jenkins emphasizes the invaluable leadership skills that students are gaining through their scientific research. "The first step," he says, "is letting them choose their projects and letting them take it where they want to go. They are in charge of what they want to do. They get to pick their audience, they pick their questions, and it is up to them to make of it what they will. Ultimately, they are getting a

## LEADERSHIP DEVELOPMENT *in the K-12 Classroom*

In recognition of the need for leadership abilities in all aspects of life, the Virginia Public School System has pioneered K-12 leadership development curriculum whose core expectations can be implemented by teachers in a broad range of disciplines. The Virginia school system defines the essential skills as the following:

- Developing a vision
- Motivating others
- Taking initiative
- Communicating effectively
- Setting goals
- Making decisions
- Managing resources
- Facilitating the development of additional leaders

Source: Virginia Department of Education, Leadership for the 21st Century, [www.pen.k12.va.us/VDOE/Instruction/leadership/appendixa/appa3.html](http://www.pen.k12.va.us/VDOE/Instruction/leadership/appendixa/appa3.html)

**RIGHT**  
**For Pajaro Valley High School students, interaction with their environment includes creating housing for local bird species.**

really strong hands-on lesson in self-efficacy.’

Similarly, Garrett sees her students developing leadership skills through defining and becoming proud of their place in the community. She says, “Our students are learning to be stewards of the land, discovering that they don’t have to be a negative part of the ecosystem. They belong here, too. By realizing that they have a choice of whether they are a positive or negative influence on the environment, they are beginning to understand that they can shape the environment in really great ways.” Garrett feels that by seeing the positive ramifications of their work in the wetlands, students combat the feeling of being undervalued in the community: “This is a really great time in their lives to be able to step up and feel like they are leaders, that they are supported and that they are valuable,” Garrett adds.

**Keys to Success**

Both Garrett and Jenkins emphasize that the leadership development and hands-on science aspects of their programs can be implemented by individual teachers. Jenkins suggests, “One of the key lessons is get kids outside! Get them excited. Every high school has an outdoors; even an inner-city high school will have something nearby—an urban creek or a park.”

Jenkins also recommends contacting local scientific resources: aquariums, zoos or science teachers at community colleges or universities. He says, “A lot of university professors are wondering why students aren’t coming in with the skills they need to have to succeed, so they are looking for solutions, too. It is a matter of reaching out.”



Finally, Jenkins urges that you give students an audience: “If you are going to have them do a science project, have them either present to younger kids or do an eco-fair at the school so they are sharing their information with others. I think that is a powerful lesson for them.”

For teachers who have a bigger project in mind, Garrett recommends collaboration between nonprofit and community groups in applying for funding. She also suggests recruiting and training community volunteers to work with the students. “Having community members come and serve as role models and work with youth is vital,” Garrett says. “Most teachers need extra support since class size is huge, and community mentors help provide a meaningful experience for students.”

**The Power of Collaboration**

Ultimately, Pajaro Valley High and its partners are demonstrating the power of compromise and collaboration. Turning a contentious and environmentally sensitive area into a site of learning and stewardship will have positive ramifications in

the city of Watsonville for years to come because protection of the land is partnered with the development of a new legion of environmentally aware citizen leaders.

Jenkins reiterates just how significant and affirming the combination of service and science is for the students: “When the students connect with officials and leaders in the science field, they see that they are people, very much like us. They may be the leading experts on the red-legged frog, but they have families, too, and deal with the same issues that we deal with. For the kids, understanding has been really powerful. They can say, ‘There isn’t this separate category of scientists and leaders, and then me. I can be one of those people.’”

*Jenny Kurzweil is a senior editor at SACNAS News.*

1 City of Watsonville. “History of Watsonville.” [www.ci.watsonville.ca.us/information/history.html](http://www.ci.watsonville.ca.us/information/history.html)

2 Monterey Bay National Marine Sanctuary. <http://montereybay.noaa.gov/>

3 The Rouge River Project. “Why Wetlands Are Important.” [www.rouge-river.com/wetlands/important.html](http://www.rouge-river.com/wetlands/important.html)



## SERVICE *Learning*

The National Service-Learning Clearinghouse reports that an estimated 10.6 million students (38 percent) say that they have participated in community service as part of a school activity or requirement. Service learning is defined as “a teaching and learning strategy that integrates meaningful community service with instruction and reflection to enrich the learning experience, teach civic responsibility, and strengthen communities.”

Source: National Service-Learning Clearinghouse, [www.servicelearning.org](http://www.servicelearning.org)

## K-12 RESOURCES

For more information on the programs highlighted in this article, see the following websites:

■ *Monterey Bay Aquarium*  
[www.mbayaq.org](http://www.mbayaq.org)

■ *Monterey Bay National Marine Sanctuary*  
<http://montereybay.noaa.gov>

■ *Fitz Wetlands Educational Resource Center*  
[www.fitzwerc.org](http://www.fitzwerc.org)

■ *Watsonville Wetlands Watch*  
<http://watsonvillewetlandswatch.org>

For resources on environmental education programs for inner cities, lesson plans and curriculum and resources about outdoor education:

■ *Ecology Lesson Plan Links*  
A comprehensive, annotated listing of ecology lesson plans and resources.  
[www.sciencespot.net/Pages/nclssltnks.html](http://www.sciencespot.net/Pages/nclssltnks.html)

■ *Outdoor Education Research and Evaluation Center*  
This site provides resources about outdoor education and related programs and methods, such as residential camping, experiential education, environmental education, and adventure therapy.  
[www.wilderdom.com/research.php](http://www.wilderdom.com/research.php)

■ *Sierra Club Inner City Outings*  
Sierra Club Inner City Outings is a community outreach program that provides opportunities for urban youth and adults to explore, enjoy and protect the natural world.  
[www.sierraclub.org/ico](http://www.sierraclub.org/ico)

■ *Terrain for Schools*  
Terrain for Schools is a unique, current events-based curriculum for high school teachers and college instructors.  
[www.ecologycenter.org/tfs](http://www.ecologycenter.org/tfs)

For resources on youth leadership development:

■ *The Freechild Project*  
The Freechild Project is a resource, training, and consultation program working with individuals and organizations around the world. We focus on a variety of topics, including youth voice, youth-led activism, meaningful youth involvement, and youth-adult partnerships.  
[www.freechild.org/index.htm](http://www.freechild.org/index.htm)  
The Freechild Project has compiled an amazing list of youth leadership development resources nationwide at:  
[http://freechild.org/youth\\_leadership.htm](http://freechild.org/youth_leadership.htm)

■ *The National Indian Youth Leadership Project (NIYLP)*  
NIYLP is dedicated to positive youth development for Native American young people, their families and communities.  
<http://niylp.org/node>

■ *Youth Leadership.com*  
An online information center for youth leadership education and development.  
[www.youthleadership.com](http://www.youthleadership.com)



# DR. RUSSELL STANDS OVER BULL

## *Geologist*

**By Marisa Mercado**

**“EDUCATION IS YOUR MOST POWERFUL WEAPON,”** said Chief Plenty Coups, one of the last Crow Indian war chiefs. “With it, you’re the white man’s equal. Without it, you become his victim.” Chief Plenty Coups led our tribe before the U.S. settled the West, and continued to lead it into the transition of living on a reservation.

I am a full-blood member of the Crow tribe of south-central Montana. Growing up, I was immersed in tribal culture and conduct, and spoke the Crow language before learning English. American culture was somewhat foreign to me. We have extended families in our tribal communities, where aunts are respected as mothers, and cousins are like brothers and sisters. Grandmothers would tell us about the history of our people and how we survived the wars and smallpox epidemics. We embrace our identity as survivors and the host people of this great country.

Chief Plenty Coups’ words were important in my family. On my mother’s

side, there are generations of teaching experience. My grandmother was the first Crow Indian to get a four-year degree in teaching and my mom was a principal, administrator and teacher for over 30 years. My father taught high school and was also a tribal leader, so I was exposed to community issues at tribal, state and national levels. As he encouraged his children to go to college, my father also ingrained in us the understanding that there would come a time when the tribe would call upon us and our specific skills, and we were obligated to come back to help.

I wanted to help by becoming either a scientist or physician. Knowing it would take extra effort, I worked hard in all my science and math classes. Also, after my junior year in high school, I was part of a summer internship program for native youth at Montana State University (MSU). It was very competitive, and provided exposure to university research projects, which I later came to understand as being an integral part of a career in the sciences.

I had a summer job at a coal mine when I was just out of high school. We have one large mine on the reservation, and others close by. Working with geoscientists, I was intrigued by their expertise in mapping the location of coal

and directing mining operations. I was very interested in their ability to predict where the coal was underground. When I learned that I could identify hidden deposits of oil and gas, even gold or silver or diamonds, I knew what I wanted to study.

Only a few of my peers went on to finish their college education. Coming from an Indian school system, we’re not always prepared for college, where being Native American, you are truly in the minority. Although racial discrimination was not unusual at border towns along the reservation, I determined within myself to keep an open mind, and made a commitment within myself to look for the best in people. I used my experience to learn about others, and recognized that we are all part of the human tribe. I found a new and unfamiliar culture at Montana State University. People interacted differently, and I was one of the few on campus who spoke Crow. Although there were other Native Americans there, the university population is so large that I hardly saw them during the course of the day. That shock alone prevents many from continuing an education. Often the struggle is not about how smart you are, but how well you can cope with that change, and having persistence.

In our culture, early marriage is a traditional custom. I thought I had a hard time, and then I saw Indian women with one or two kids, often single mothers, working and going to school, and successfully finishing! As I admired and respected them, it helped me to keep in mind that many times people face even larger obstacles than I did and still get through school. It’s difficult, but people do make it.



## SACNAS Biography Project

[www.sacnas.org](http://www.sacnas.org)

I started college dreaming only of a bachelor's degree in geology. But by senior year, I realized that if I started working, my salary would not be what I was hoping for. I decided to get a master's degree at Colorado School of Mines. I didn't even think about a Ph.D. That's the way dreams are. I learned to take one step at a time—each step will lead to the next. Eventually I found myself saying, "Well, there are very few Natives with a Ph.D. Why don't you be the one who breaks the trail?"

My Ph.D. program at Colorado School of Mines required steely discipline. I worked full time in the oil industry and then came home to work on my dissertation. After staying up late, I woke up each morning to another long day. I also had two children by then. What kept me going was my ability to dream, and having enough passion, determination and faith to chase my dreams.

In 2001 I was called home, as my father had predicted. I developed Arrow Creek Resources, to provide geoscience expertise to the Crow and other tribes. During my time with Arrow Creek Resources, I helped tribes understand the value of their natural resources, and the steps for making informed decisions when dealing with outside companies.

Then I moved to Houston, far from the reservation, to rejoin the petroleum industry with a large company. I did get homesick, but that is the price to be successful as a geoscientist. From day one, my wife and I taught our children how to speak Crow, so we have always had our own tribal community at home. It was wonderful to live in a big city, learning about new groups of people and cultural practices. I just loved the rainbow of cultures in Houston.

In 2006 I accepted a position with another petroleum company that has allowed me to move back to Montana while continuing to work on projects throughout the U.S. I also serve part-time as an adjunct professor in the Department of Earth Sciences at Montana State University, Bozeman, where among other things I am also very involved in Native support services. We need more young people to break trails and become champions in their industry. Becoming a geoscientist positioned me to be able to contribute significantly to the tribes. Whether it's the science, medical or computer industry, you'll make the biggest impact by becoming a champion in your particular field, so you can answer the call of your people when it comes.

*Marisa Mercado, a Xicana activist for social and environmental justice, is a regular contributor to the SACNAS News.*



Pittsburgh Mind-Body Center

### SUMMER INSTITUTE ON SLEEPING, EATING, & PHYSICAL ACTIVITY: A FOCUS ON HEALTH BEHAVIOR

June 6 - 9, 2007  
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The Institute will focus on behavioral medicine intervention research and use the content areas of diabetes, CVD, and cancer as exemplars. Applicants should be postdoctoral fellows or faculty with a limited background in behavioral medicine. For details, visit: [www.pghmbc.org](http://www.pghmbc.org).

To apply, send vitae, brief statement on why you want to attend, one reference letter, and contact information to Lori Arnold ([arnoldla@upmc.edu](mailto:arnoldla@upmc.edu)). Application deadline: April 20, 2007.

## Assistant/Associate Professor of Bioinformatics/Computational Biology

Department of Biostatistics  
Harvard School of Public Health

The Department of Biostatistics at Harvard School of Public Health (HSPH), is seeking an outstanding candidate for a tenure-track faculty position in **Bioinformatics/Computational Biology** at the level of Assistant or Associate Professor. The successful candidate would join an active group at HSPH developing novel computational and statistical methods, and conduct collaborative research with clinical and basic scientists at Harvard University and its affiliated medical centers. She/he is expected to play a vital leadership role in expanding the quantitative science research and educational programs at HSPH in bioinformatics and computational biology and its related fields. Candidates should have doctoral degree and a demonstrated record of achievement; candidates in all areas of computational biology, bioinformatics and statistical science are encouraged to apply. Please send a letter of application, including a statement of current and future research interests, a curriculum vitae, sample publications, and the names of three referees to the address below. Applicants should ask their three referees to write independently to this address.

**Computational Biology  
Junior Faculty Search Committee  
Department of Biostatistics  
Harvard School of Public Health  
655 Huntington Avenue, 4th Floor  
Boston, MA 02115**

*Harvard School of Public Health is strongly committed to increasing the representation of women and minority members among its faculty and particularly encourages applications from such candidates.*

# Giving Something Back to Your Community: *My Leadership Vision*

**By Almaris N. Alonso, M.S.**

**I GREW UP IN BARRIO ESPERANZA** in a town called Arecibo on a gorgeous 100 by 35 mile island named Puerto Rico. I attended a public community school called S.U. Diego Bravo. It is the closest school to the Arecibo Observatory, the largest radio telescope in the world. Scientists searched all over the world to find a place like Barrio Esperanza; here, the enormous dish of the radio telescope sits perfectly in place surrounded by mountains, rivers and beautiful caves. Yet, even after construction of the Arecibo Observatory, Barrio Esperanza remained sheltered from many modern technologies. It wasn't until the late 1980s that cable TV and telephones arrived. The lack of these technologies allowed me to appreciate the truly magnificent beauty of my beloved home.

Instead of Tarzan movies, I enjoyed hanging upside down in the vines from a cave behind my house. Instead of water parks, my cousins and I visited the subterranean rivers that rise and hide in various mountains near my home. Instead of karaoke, we had free tickets to join our voices with the echoes of the rain falling inside a cave, singing a Menudo song called "Lluvia." These experiences were priceless to me.

These days, as a doctoral candidate, I have the opportunity to use my invaluable childhood experiences as motivation to achieve the highest degree in science. Despite being far away from my island, community and family, I receive from them the driving force—a feeling of responsibility to protect my community and help it flourish—that inspires me to take on leadership roles to help others access the opportunities I have taken advantage of.

**BELOW**

**S.U. Diego Bravo teachers, Mayra Juarbe (left) and Luz Vázquez (far right), joined Almaris Alonso (center) at the 2006 SACNAS National Conference to receive recognition of the first SACNAS student chapter in Puerto Rico.**





*“Leadership should be born out of the understanding of the needs of those who would be affected by it.”*

—Marian Anderson

**LEFT**

**Almaris Alonso’s alma mater, S.U. Diego Bravo community school is the site of the inaugural Puerto Rican SACNAS student chapter.**

### **Leadership Rule 1: Identify the Extraordinary Inside Yourself**

To give something back, you must first find the unique qualities you have to offer. What I have to offer is the strength and appreciation for life that I gained from my exceptional childhood, and the passion and dedication to realize my educational dreams, which the support of my family instilled in me. Identifying these attributes in myself helped give me the confidence to become a leader. As a student leader, I have learned to organize groups of students and teachers, motivate them, and show them the beauty and the importance of being part of a scientific and multicultural society like SACNAS.

In 2006, I founded the SACNAS student chapter at the University of Massachusetts (UMass), Amherst, and the first Puerto Rico SACNAS chapter. Both chapters provide underrepresented students, faculty and teachers with guidance and support to help them achieve their educational and professional goals. As president, my main objective is assisting chapter members to access more opportunities in STEM disciplines. It was very challenging to open a SACNAS chapter at UMass and in my community school when I was the only SACNAS student member. I devoted myself to this mission, improving my interpersonal and presentation skills along the way. As a SACNAS leader, I was able to increase my contact list to include people from, for example, the Arecibo Observatory, Microsoft Corporation and NASA.

Being elected to the SACNAS board of directors in 2005 further increased my leadership development. Participating in discussion forums, serving on committees and being involved with coordinating the SACNAS National Conference strengthened my communication, teamwork, problem-solving and organizational skills. I completed my duties as student representative last year and the position was one of the most rewarding experiences I have ever had. The challenges I faced, the skills I developed, the people I met, the places I visited, and the opportunities this position gave me will always remain with me as SACNAS ambassador.

### **Leadership Rule 2: Collaborate with Other Enthusiastic and Motivated Individuals**

Opening the first SACNAS student chapter in Puerto Rico was a huge task, probably the most challenging and rewarding leadership activity I have taken part in thus far. I decided to open it in the community school Diego Bravo, the school where I studied from kindergarten to ninth grade. I started by collaborating with goal-oriented people; I contacted teachers from the school, including my mother, Mrs. Myriam Rosario (who sadly passed away in January 2006), Mrs. Mayra Juarbe and Mrs. Maribel Ortiz. Taking the lead in getting other enthusiastic people involved, Mrs. Juarbe called for a meeting with the entire faculty and several community members. As a result of the team’s efforts, the first Puerto Rico SACNAS student chapter was approved, established and named in honor of my mother: the Myriam Rosario Burgos SACNAS Chapter.

As an advisor to the chapter in Arecibo, I had the responsibility of finding support for K-12 teachers to attend the 2006 SACNAS National Conference. Using SACNAS guidelines, I requested funds from the Arecibo Observatory and they agreed to sponsor two teachers from S.U. Diego Bravo to attend the conference in Tampa, Florida. Mrs. Juarbe, the chapter organizer and vice president, and Mrs. Luz Vázquez, the seventh- through ninth-grade science teacher, describe this opportunity as one of the best learning and multicultural experiences they have ever had.

### **Leadership Rule 3: Have a Clear Leadership Vision**

SACNAS is an organization that encourages all of its members to see themselves as leaders. As an active SACNAS member, I have had many opportunities to help my



community. I have gained personal satisfaction, versatility and unique tools to achieve my goals. I have stayed involved with SACNAS year-round, learned about scientific opportunities in my field, and developed a broad network of colleagues throughout the U.S. and Puerto Rico. Eventually, I will take these assets with me to improve my career.

I have learned that if you want to be a SACNAS leader, you must make the most of your exceptional qualities, partner with others and share your vision. Be goal-oriented, organized and eager for a challenge. If you decide to open a SACNAS chapter, go for it. Start by establishing a time frame. Don't fear being a leader. Pursue your goal with tenacity; motivate your mind through positive thoughts about the mission you seek to accomplish. Founding a chapter or serving on the board of directors are extracurricular activities, but they are also opportunities that don't come along very often.

Being a SACNAS leader allows me to pay it forward to my community—to help the public school system, the teachers and the underrepresented students that are in desperate need of assistance and motivation—and to say I am proud of who I am. This is my vision of leadership. What is yours?

Please send your visions of SACNAS leadership to [aalonso@microbio.umass.edu](mailto:aalonso@microbio.umass.edu).

*Almaris Alonso, M.S., has a B.S. in industrial microbiology and a M.S. in biology from the University of Puerto Rico, Mayaguez. She is currently a Ph.D. candidate in microbiology at the University of Massachusetts, Amherst.*

#### ABOVE

*Almaris Alonso (fourth from left) pictured with representatives of the UMass SACNAS Student Chapter at the 2006 SACNAS National Conference in Tampa, Florida.*

## STUDENT RESOURCES

For more information on the programs highlighted in this article, see the following websites:

- *Arecibo Observatory: National Astronomy and Ionosphere Center*  
[www.naic.edu](http://www.naic.edu)
- *SACNAS Student Chapters*  
[www.sacnas.org/chapters.cfm](http://www.sacnas.org/chapters.cfm)
- *Student Membership: SACNAS Board of Directors*  
[www.sacnas.org/elections.cfm](http://www.sacnas.org/elections.cfm)

For resources on science leadership:

- *Becoming Leaders: Successes of a Handbook and Workshop Series for Women in Science, Engineering and Technology*  
[www.3.nf.sympatico.ca/carolyn.emerson](http://www.3.nf.sympatico.ca/carolyn.emerson)
- *Christine Mirzayan Science & Technology Policy Graduate Fellowship Program*  
[www.7.nationalacademies.org/policyfellows/index.html](http://www.7.nationalacademies.org/policyfellows/index.html)
- *ScienceCareers.org Article: "Leadership on the Mountain: Lessons for the Lab"*  
[http://sciencecareers.sciencemag.org/career\\_development/previous\\_issues/articles/2730/leadership\\_on\\_the\\_mountain\\_lessons\\_for\\_the\\_lab](http://sciencecareers.sciencemag.org/career_development/previous_issues/articles/2730/leadership_on_the_mountain_lessons_for_the_lab)

*Viewpoint features distinguished SACNAS mentors, honored annually at the National Conference, who respond to questions from students regarding research, graduate school, internships, etc.*



**ABOVE**

**Throughout his career, Dr. Bob Pozos has been dedicated to perfecting his skills as a student mentor and he is a founding member of SACNAS.**

*Featured Mentor:*

# ROBERT (BOB) STEVEN POZOS, Ph.D.

**Q:** *I'm working toward a graduate degree. What guidance can you give me on how you accomplished this?*

**A:** I assume by the question that you are in graduate school. Working toward a graduate degree entails a couple of key ingredients that I found productive for me:

1) Develop a close relationship

with your advisor. He or she will be your major supporter and a key liaison with other faculty at other universities.

2) Work tirelessly on your research. You should be enthusiastic about your research and excited about the research you are pursuing.

3) Write abstracts and papers concerning your research.

4) Apply to postdoctoral programs. Your graduate degree will only (!) get you a Ph.D. You need to have a postdoctoral fellowship at an outstanding university.

5) Network within the lab and outside. Connections, new ideas, and positions all come from building strong, positive relationships with other scientists.

6) Find some time with friends to relax. The best insights into your research and career come about when you relax.

**Q:** *What kinds of opportunities provide the best training in public speaking and research presentation skills? Are there any I can access from my school?*

**A:** The best training for public speaking is to find various opportunities to practice, practice, practice. Some of us are natural actors (i.e., hams) and it is not difficult to speak publicly. For many others, it is a formidable challenge.

Toastmasters ([www.toastmasters.org](http://www.toastmasters.org)) is an excellent organization in which to practice your skills. All universities offer some kind of public speaking course. Take those that

emphasize public debating. If you have time, join the public debate team. Also, get involved in a student organization so that you are forced to speak to various groups. Many universities have outreach programs to high schools. Join those programs so you can talk to the students. If you have the time, join an acting group so you have to perform on stage. I assure you from my own personal experience that after that experience, public speaking in front of scientists will be a breeze.

**Q:** *I am having trouble balancing my classes and lab work with my activities in student groups on campus. Is there a recommended formula for choosing which things to stay involved in? How much will graduate schools look at my student leadership?*

**A:** You raise a great question. Graduate schools do not care about your student leadership as much as your GRE and grade point average. I tell all my students—half in jest and half seriously—to get a 4.0, excel in the GRE and then get involved in student programs. Most graduate programs will focus in on your GRE scores and grade point average. Regrettably, they do not consider your extramural activities. I urge you to have a balanced life, with some time spent on non-academic endeavors. However, when push comes to shove, your priority is excelling in courses.

*Dr. Bob Pozos received the 2006 SACNAS Outstanding Undergraduate Institution Mentor Award. He is a professor at San Diego State University studying how to use the web to promote scientific literacy in freshman students as well as mechanisms that control skin and muscle blood flow in various thermal environments. If you have additional questions, please contact Dr. Pozos at [bpozos@sciences.sdsu.edu](mailto:bpozos@sciences.sdsu.edu).*

# Making an Impact

By Edward Ramos, Ph.D.

**IN MY NON-TRADITIONAL POSTDOC-TORAL CAREER,** I am currently performing a genetics and public policy fellowship co-sponsored by the American Society of Human Genetics (ASHG) and the National Human Genome Research Institute (NHGRI) of the National Institutes of Health. The fellowship is a unique opportunity for me as a geneticist to learn and understand the policy-making process at a national level, while also providing me a forum to help shape and offer advice on these policies. It is an opportunity for me to draw together my diverse interests and extend my professional skills beyond anything I have experienced previously.

Broken up into three different components, the fellowship includes interaction with both of the sponsoring institutions as well as a congressional office. I recently finished my rotation through the Policy and Program Analysis Branch at NHGRI, which offered an excellent primer for my transition to Capitol Hill. As I interviewed with congressional offices, I was fortunate to have my interests and background mesh well with

Senator Obama's office and was extended an offer to join their health

policy team.

Working with the senator is one of the most unique and rewarding opportunities of my career to date. My tasks include interacting with various organizations, constituents, and concerned citizens on a wide range of science- and health-related topics. I also help identify areas of interest that could potentially require legislation and, ultimately, assist in drafting this legislation.

At present, one of my projects has to do with the senator's reintroduction of a bill that addresses genomics and personalized medicine. As part of his health policy team, I help review com-

experience into legislation aimed at helping this country. It truly is an exciting feeling to realize the potential impact I can have.

## Shifting Perspective

A pivotal point in my life came when I decided to stop yelling at the TV and start being more productive and proactive. I thought to myself, "What better way to start than with my local community, the place where I live and that I am most familiar with?" I quickly recognized that it is very easy to criticize and to point out the negatives of any situation; it's the solutions that seem hard to

*"A pivotal point in my life came when I decided to stop yelling at the TV and start being more productive and proactive."*

ments on the bill submitted by industry, academia, and relevant organizations, and make recommendations to the senator on what the team feels are important points that help shape the legislation.

In the limited time I have spent in the office, my understanding of the law-making process has increased exponentially. I imagine the remainder of the year to bring more opportunities for me to incorporate my knowledge and

come by. I decided that if I give back to my community, I can help lead us toward those solutions.

Once I got over thinking, "Who am I for people to listen to?" there was nothing stopping me. Everyone on this planet has a purpose. Once I felt I had a right to be heard just as much as the next person, I was able to use my voice to further my career and my aspirations for bettering the community. Every time I hear someone give a riveting speech or even a well-executed presentation, I push myself more to refine my speaking skills. I maintain a philosophy that if you do not articulate your thoughts and your passion for what you do, you are doing yourself and your goals a disservice.



## LEFT

**At the 2006 SACNAS National Conference, Dr. Edward Ramos introduced distinguished speaker Dr. Claire Fraser-Liggett, president of the Institute for Genomic Research, to nearly 2,000 conference participants.**



## Toward Community Leadership

When I was a graduate student in Seattle, the absence of minorities represented in the sciences was very apparent. I decided, along with another graduate student, to create an organization that could act as a bridge between local community organizations, academe, industry and underrepresented minorities.

The organization we created, Initiatives for Diversity And Engineering in Science (IDEAS), is focused on building an awareness of the different opportunities that are available in the sciences, especially in the Seattle area and throughout the state of Washington. One of the organization's main initiatives—which is still ongoing—is to bring a future SACNAS National Conference to Seattle. My efforts, in collaboration with many other dedicated people, established lines of communications between parties working to achieve this goal. In addition, we initiated steps toward establishing a SACNAS student chapter in Seattle.

Thus, a simple idea turned into a grassroots-type effort that resonated throughout the local community. It was a fantastic feeling of accomplishment, culminating in a SACNAS board of directors' site visit to Seattle in 2006, which was largely sponsored by individuals, and their respective organizations and institutions, who care about uniting

the city and SACNAS.

As a graduate student at the University of Washington, I supplemented my active membership in SACNAS with involvement in other groups, such as the Minority Scientist Recruitment and Retention Coalition at the Fred Hutchinson Cancer Research Center, which also looked to advance underrepresented minorities (URMs) in the field of science. I also served on discussion panels that allowed me to act as a mentor to younger URMs interested in higher education by speaking about my experiences. Toward the end of my graduate education, I took advantage of any and all opportunities that gave me a chance to be heard or, more importantly, a chance to act as a mentor.

## Work to Make a Difference

Through community and mentoring activities, I furthered my understanding of leadership and developed an appreciation for old adages, such as "actions speak louder than words," which, as it has been made clear to me, is not necessarily the case. In fact, I find that a balance between the two is important. The great Dr. Martin Luther King, Jr., changed this nation largely through his words. Now, don't get me wrong, I would never in any lifetime put myself at the level of Dr. King, but his tremendous accomplishments illustrate much of what many leaders strive for.

I am excited about my future because I feel that I have opened so many different doors. My ultimate goal is to merge all my experiences and training in science, policy, outreach and mentoring. I often have visions of leading my own institute that incorporates all of these interests.

However, looking back, I never consciously felt that I was actively acquiring leadership skills. But, as it turns out, I always seem to align myself with people who work toward making a difference, whether it is a scientist, a community organizer, or a program director. What I realized was that the level of impact each of these individuals could make was largely based on how far they could lead. If you have a passion for achieving a certain goal, it becomes very difficult to actualize advances toward that goal if you cannot instruct, implement and have an impact on other people. ■

*Edward Ramos, Ph.D., received a doctorate in genome sciences with a dissertation on cancer biology from the University of Washington, via the Fred Hutchinson Cancer Research Center, in June, 2006. He is currently serving the congressional component of his ASHG/NHGRI policy postdoc in Senator Barack Obama's Washington, D.C., office. He welcomes any and all comments or questions and can be reached via email at [Edward\\_Ramos@obama.senate.gov](mailto:Edward_Ramos@obama.senate.gov).*

## POSTDOC RESOURCES

For more information on the programs highlighted in this article, see the following websites:

■ **ASHG/NHGRI Genetics and Public Policy Fellowship**  
[www.genome.gov/10003979](http://www.genome.gov/10003979)

■ **Minority Scientist Recruitment and Retention Coalition at the Fred Hutchinson Cancer Research Center**  
[www.fhcrc.org/science/minority\\_portal/about.html](http://www.fhcrc.org/science/minority_portal/about.html)

For resources on policy fellowship programs:

■ **American Association for the Advancement of Science, Science & Technology Leadership Programs**

• AAAS Leadership Seminar in Science and Technology Policy (November 12-16, 2007): [www.aaas.org/programs/science\\_policy/leadership](http://www.aaas.org/programs/science_policy/leadership)

• AAAS Science & Technology Policy Fellowships:  
<http://fellowships.aaas.org>

■ **American Chemical Society Public Policy Fellowships**  
[www.chemistry.org/portal/a/c/s/1/acdisplay.html?DOC=government%5Cfellowships%5Cfellowship.html](http://www.chemistry.org/portal/a/c/s/1/acdisplay.html?DOC=government%5Cfellowships%5Cfellowship.html)

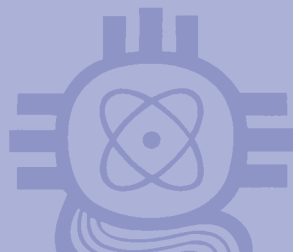
■ **American Psychological Association Congressional Fellowship Program**  
[www.apa.org/ppo/fellows/congressional.html](http://www.apa.org/ppo/fellows/congressional.html)

■ **American Society for Microbiology Congressional Science Fellowship**  
[www.asm.org/policy/index.asp?bid=14160](http://www.asm.org/policy/index.asp?bid=14160)

■ **National Center for Health Statistics (NCHS) Health Policy Fellowship**  
[www.academyhealth.org/nchs](http://www.academyhealth.org/nchs)

■ **Presidential Management Fellows Program**  
[www.pmf.opm.gov/Index.aspx](http://www.pmf.opm.gov/Index.aspx)

■ **Society for Research in Child Development Policy Fellowships**  
[www.srcd.org/policyfellowships.html](http://www.srcd.org/policyfellowships.html)



# Stretching the Imagination to Support Leadership and Sustainability

Kansas City, Missouri • October 11–14, 2007



## Conference Overview

**The SACNAS National Conference** blends science, culture and community, bringing together the nation's finest science researchers, students, leaders and educators.

Interdisciplinary, inclusive and highly interactive: The conference will motivate and inspire you!

### MENTORING

At the conference, SACNAS offers a comprehensive and unique model of conference-based mentoring that is both personalized and interactive. The SACNAS Partnering for Higher Degrees—Scientists and Students (PhDs<sup>2</sup>) Mentoring Program supports all attendees in advancing to the next level in their education or career:



**Networking Lunches:** Unite mentors and mentees to discuss conference sessions and experiences, as well as mentee-generated questions about topics such as how to choose a career path, develop research skills, or find a mentor at one's institution

### Student Presentations

Critical science mentoring occurs during research presentations by students. Students' interactions with mentors begin well before the start of the conference with the abstract review process. Through the structured mentoring and judging of student oral and poster research presentations, SACNAS professionals mentor students in scientific research, visual presentation and public speaking skills.

### Professional Development

**Graduate School Workshop:** Focuses on graduate school applications, statement of purpose, and graduate school selection; provides potential graduate students with the information necessary to prepare for the admission process and to subsequently create and submit a competitive application packet

**Professional Workshops:** Delivers honest and practical insight on life issues—such as balancing home, career and culture—and on career issues like building a curriculum vitae, preparing an abstract, developing presentation skills, exploring career options, getting a job and attaining tenure

**Exhibit Hall:** Allows over 250 institutions to connect with participants regarding opportunities for research, internships, scholarships, fellowships and graduate school

### Leadership Institute

Designed to assist postdocs and junior faculty in critical areas of career development, the intensive leadership institute covers topics such as taking charge of your career, creating a leadership path and working with teams.

*“Currently, I am nearing the end of my postdoctoral fellowship and am consequently searching for an assistant professor position.... Not only was I able to meet many important contacts but I got several leads on potential job prospects.”*

*- Ricardo Bernal, postdoc, biochemistry*

### Mentoring Activities

**Orientation Sessions:** Provide participants with the skills to strengthen their personal and professional network, and prepare them to take advantage of all conference opportunities

#### Conversations with Scientists:

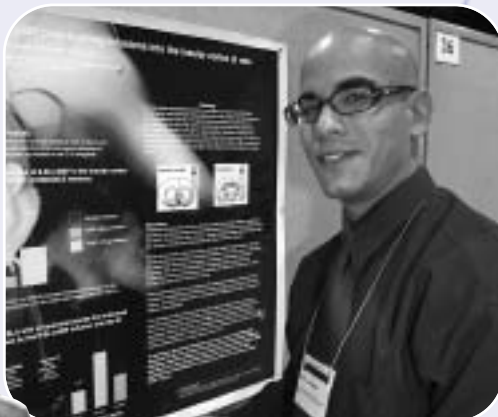
Fosters lively discussion among participants with peers and mentors within their discipline and sets the stage for ongoing mentorship and support throughout the conference



**Artwork:** Sketches by Benjamin Harjo, Jr., Shawnee/Seminole



# CONFERENCE



## SPECIAL OPPORTUNITIES DEADLINES

Financial Aid to Attend the SACNAS Conference:

**May 31**

Summer Program Financial Aid:

**July 20**

Student Research Abstract Submission:

**July 20**

Detailed information, registration, financial aid application, abstract submission and more are available online at [www.sacnas.org](http://www.sacnas.org).



## KEYNOTE ADDRESSES AND SCIENTIFIC SESSIONS

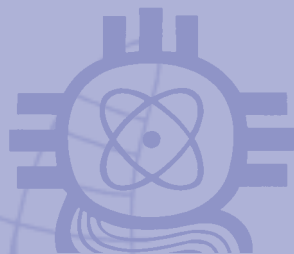
Talks engage participants with nationally recognized scientific role models. Their demonstration of cutting-edge research and presentation strategies allows attendees to discover new research methodologies, develop research presentation skills, and explore areas of scientific interest and potential future careers.

### Featured Keynote Speaker **Richard Tapia, Ph.D.**

Rice University  
University Professor; Maxfield-Oshman Professorship in Engineering, Department of Computational and Applied Mathematics  
Director, Center for Excellence and Equity in Education  
Associate Director of Graduate Studies, Office of Research and Graduate Studies

*"This conference is so spiritually lifting and always mind- and eye-opening for me every time I attend. I feel empowered to continue on with my research with greater fervor as a graduate student, a research scientist, a teacher and a mentor."*

*- Itchung Cheung, graduate student, marine biology*



## SACNAS' New Leadership Institute

**Greg Villareal, Ph.D.**

**Tuesday night, October 24, 2006:** The airline had lost my luggage. I arrived in the hotel lobby with only my carry-on bag and the clothes I had thrown on earlier that morning in a Chicago hotel. Fortunately, the unpleasant feelings quickly vanished (like my luggage) when I was greeted by familiar faces and warm embraces from old SACNAS friends. It had been at least four years since my last SACNAS conference, yet I felt like I was home again.

I had come early to the conference to take part in a leadership development course organized, in conjunction with SACNAS, by Dr. Irelene Ricks from the Biotechnology Institute and led by Dr. Howard Adams of H.G. Adams and Associates, Inc. (a consulting company that provides career, personal and professional development services). Dr.

Adams is a former executive director of the National Consortium for Graduate Degrees for Minorities in Engineering and Science, Inc. (The GEM Program).

**Wednesday, October 25, 2006:** "Networking with the white folks doesn't hurt!" The audience roared with laughter at Dr. Adams' striking statement, delivered in a full Virginia drawl. This declaration during the communication and networking portion of the session was a reminder that we should not limit ourselves, as underrepresented individuals, to our own race or scientific background; in other words, expand your network.

From the outset of the full-day seminar, Dr. Adams enthusiastically proclaimed us to be the new leaders of SACNAS. Through exercises, cajoling proclamations, hard-won advice and lively discussion, the course helped us tap into our potential and natural leadership skills ... with the caveat that leaders are not always born. The creation of a leader may come from an external source or from one's self; sometimes we just need someone or some entity like SACNAS to facilitate the fulfillment of that character. By the end of the day, the fact that we

all have leadership potential was solidified for each of us.

I walked away nearly deluged with advice that I will take to heart: Read, read, read. Practice, practice, practice. Leadership development entails the skills not only to acquire sound knowledge, but the ability to disseminate information that influences the actions of others. Read newspapers daily to keep up with trends. Know your skills, interests and goals—know thyself. Always be meticulous in your work and in everything that you do. After all, we cannot begin to become leaders or mentors if we don't have credibility or character.

Money. How do you negotiate a salary when taking on your first job? Dr. Adams described intuitive strategies to earn what you're worth and a little extra, such as writing a biosketch for yourself and getting business cards printed. Take the initiative to brand and market yourself. You never know who may have the deep pockets to finance your ideas or help realize your vision—recognize the "big dogs!" But, for all that money is a requirement for functioning these days, he reminded us to always take holidays and vacations. Amen, brother.

Dr. Adams also stressed that leaders are only as strong as the people they lead, which is why a group is just as critical as the leaders who manage it. For this reason and to gauge how we worked in teams, he asked us to delve into the world of industry-related project management. We were given a case study of a mid-sized pharmaceutical company developing a vaccination for the AIDS virus. We were given several conflicts about ethical and monetary issues, and questions that needed resolution in a matter of 17 minutes. We presented our ideas and initiatives to a tough panel of venture capitalists (in reality, SACNAS members from Genentech and Dr. Clifton Poodry from the National Institutes of Health). The outcome was ... well, I can't give away all the secrets of the course. You will just have to apply to attend the leadership institute for next year's SACNAS conference to find out.

*Greg Villareal, Ph.D., recently received his doctorate degree in neurobiology from UCLA and is now an associate scientist at Galenea Corporation. He encourages you to contact him at [gvillare@ucla.edu](mailto:gvillare@ucla.edu).*



# CONFERENCE

## Recipe for Success: Recruiting at the SACNAS Conference

By Debra E. Stalk, M.P.H.

**EACH YEAR FOR THE LAST 10 YEARS,** I have attended the annual SACNAS conference as a recruiter for New York University (NYU) School of Medicine's Sackler Institute of Graduate Biomedical Sciences. I have seen a rise in the caliber of students each year, which signals that SACNAS is successful in its endeavor to support the education of Native Americans and Chicanos in the biomedical sciences. The annual conference is a wonderful opportunity for students to meet not only other students but also faculty and administrators who are committed to diversity and the development of the young scientist. There are many opportunities for all recruiters to become involved with students and serve as mentors.

In 2002, I met Paloma Vargas, a young woman giving a poster presentation who was an undergraduate at the University of Texas at El Paso. We spoke about her interest in science and what opportunities existed for her. I remained in contact with Paloma after the conference and I asked her what she was doing that summer. As she did not have any plans, I strongly urged her to apply to our Summer Undergraduate Research Program. She was accepted into the program from a pool of over 900 applicants. The following year, she did a summer program at the University of Pennsylvania and then began applying to graduate programs. Because of the support she received from our administration, she matriculated into our Ph.D. program and is currently pursuing her degree in parasitology. Paloma is a prime example of the type of student who excels with the proper mentoring. She is intelligent and capable, and simply needed mentoring to take the next steps in her academic career.

At the 2005 SACNAS National Conference, I met a young woman named Andrea Gomez who was a senior at the University of Colorado. It was November and she had not even begun to apply to graduate programs. We spoke at length about opportunities and she applied to our program the following month. We are excited that she matriculated at NYU in our Ph.D. program. She is currently doing rotations

and has excelled in her coursework. She is one of two Native American students to matriculate into the Native American Mentoring Program at NYU School of Medicine, which identifies Native American undergraduates and gives them the tools to pursue academic careers in science.

Aside from recruiting for our individual programs, participation in SACNAS affords faculty and administrators the opportunity to meet with students who have tremendous potential but lack the information and guidance necessary to succeed. I encourage those who recruit at SACNAS to make sure that they get contact information for the students that they meet and follow up with each student (including those high school students who attend). While each school may not have an academic program that supports each student's interests, a referral to another program often brings many returns. Mentoring does not have to end just because a student does not attend your university; recruiters are missing an opportunity to reach out and share their knowledge if they do not follow up with all the students that they meet. Remaining in contact with different students that I have met at the conference who are at other institutions has made me fortunate to offer mentoring and support to them throughout their education and career. There is more to recruiting than just meeting and greeting students. Getting involved is the best recipe for success!



*Debra E. Stalk, M.P.H., Mohawk, director of administrative services for biomedical science education at NYU School of Medicine and a former board member of SACNAS, has been attending the SACNAS annual conference for the last 10 years. She finds that each year students are becoming better qualified for graduate school as a result of this organization's efforts.*



■ **Georgina Bermudez**, who graduated with a B.E. in biomedical engineering in May of 2004, is currently completing a M.S. in biomedical engineering at City College of New York. She plans to pursue a second M.S. in teaching at Queens College.

■ In spring of 2006, **Roy P. Diaz, Ph.D.**, became an associate attorney at Seed Intellectual Property Law Group, PLLC ([www.SeedIP.com](http://www.SeedIP.com)), which specializes in intellectual property protection, including patent, trademark and copyright work. In 2002, he received a doctorate in physical chemistry (biophysics) from the University of Washington and was awarded a J.D. by the University of Washington School of Law.

■ **Ray M. Haynes, Ph.D.**, Arizona State University (1988), a SACNAS Life Member, recently had the honor of receiving the American Indian Science and Engineering Society (AISES) Professional of the Year Award for Executive Excellence during the 2006 annual AISES conference in Detroit.

■ **G. Walker Johnson** was accepted into the Ph.D. in Biological Sciences Program at the University of Texas at El Paso this past July (2006).

■ **Marigold Linton, Ph.D.**, past president of SACNAS, has been appointed to the congressionally mandated Committee on Equal Opportunities in Science and Engineering (CEOSE).

■ **Kermin Joel Martínez-Hernández, M.S.**, received a one-year fellowship funded by the National Science Foundation and Purdue University. This fellowship is also known as Graduate Teaching Fellows in K-12 Education (GK-12). He will serve as visiting scientist in a program designed to instill the excitement of learning science into middle school classrooms.

■ **Robert L. Montañez, Ph.D.**, who received a doctorate in chemistry in 1997 under the direction of Dr. Claude F. Bernasconi from the University of California, Santa Cruz, has been a full time chemistry professor at Cosumnes River College in Sacramento, California, since August of 1995. This January he was promoted to Dean of Science, Mathematics and Engineering at the college.

■ **Lupita D. Montoya, Ph.D.**, assistant professor of environmental engineering at Rensselaer Polytechnic Institute, recently received the following two grants: 1) "Health Effects of Nanoparticles Based on their Physico-Chemical Properties," from the NSF Nanoscale Science and Engineering Center for Directed Assembly

## SACNAS Board of Directors Elections Results

SACNAS is pleased to introduce the five newly elected members of the organization's board of directors, who began their term of service in January of 2007.

### BOARD MEMBERS:



**J.D. Garcia, Ph.D.**  
Professor of Physics  
University of Arizona

**Q: What is your definition of leadership?**

**A:** Leadership is hard to define, because it involves so many different human traits at once. I like to think of a leader as serving those in the group that he or she leads. Leadership is not about power; it is about helping the group define and then achieve its objectives. Truly listening to what the constituents' goals are, articulating those ideas for the group, providing new ways of thinking about those ideas, working hard towards the agreed-upon goals, and facilitating communication and action within the group, are the earmarks of leadership, in my opinion.



**Elma Gonzalez, Ph.D.**  
Professor of Biology  
Department of Ecology and Evolutionary Biology, University of California, Los Angeles

**Q: Who is/was the most important science leader of all time?**

**A:** In my humble opinion: Carl Sagan

**Q: What inspires you most about a leader?**

**A:** [That he/she] can clearly identify goals, analyze the strengths of his/her followers, and encourage them to work hard toward the goals. A good leader is a good cheerleader.



**Andrew Tsin, Ph.D.**  
Professor of Biochemistry  
University of Texas at San Antonio

*“A good leader is not the person who does things right, but the one who finds the right things to do.”*

—Anthony T. Padovano

**Q:** On a scale of 1 to 10, how important is it for a scientist to possess leadership abilities?

**A:** 10. A successful scientist must have well-developed leadership skills to motivate lab workers and students to accomplish relevant scientific investigations.

**Q:** What is your definition of leadership?

**A:** A good leader must be able to set a good personal example, to communicate and motivate others, make correct decisions and achieve goal/objectives in a timely manner.

## STUDENT BOARD MEMBERS:



**Kermin Martínez-Hernández, M.S.**  
Doctoral Student in Chemical Education  
Purdue University

**Q:** What is your favorite quote on leaders and leadership?

**A:** “You can’t change where you started, but you can change the direction you are going. It’s not what you are going to do, but it’s what you are doing next that counts.” —Napoleon Hill

**Q:** What inspires you most about a leader?

**A:** A leader that has a clear vision and it is willing to help other people to succeed.



**Andrea Rocha**  
Graduate Student in  
Environmental/Engineering Science  
University of South Florida

**Q:** On a scale of 1 to 10, how important is it for a scientist to possess leadership abilities?

**A:** I would say a 10. I feel it is important for scientist to have well-developed leadership skills.

**Q:** What is your definition of leadership?

**A:** Leadership is the ability to motivate, inspire, and encourage collaboration between individuals to accomplish a common goal.

Interested in joining the SACNAS leadership? Nominate yourself for the winter elections by November 4, 2007 online at [www.sacnas.org/elections.cfm](http://www.sacnas.org/elections.cfm).

## Community News continued...

of Nanostructures at Rensselaer Polytechnic Institute; and, 2) “Rensselaer and Grupo de Apoyo al Sector Rural for a Sustainable Peru,” a Sustainable Visions grant from the National Collegiate Inventors and Innovators Alliance (NCIIA).

■ In fall of 2006, **Michele A. Perchez, M.S.**, joined the full-time faculty (with a tenure-track position) at Grossmont College in El Cajon, California. Over the past eight years, she has taught biology as an adjunct instructor at various community colleges in southern California, including seven years at Grossmont College.

■ **Andrea Rocha**, a doctoral student in the Department of Civil and Environmental Engineering at the University of South Florida, was awarded an NSF Bridge to the Doctorate (2006-2008) and the Alfred P. Sloan Minority Ph.D. (2006-2007) fellowships. She is studying redox biotransformations of heavy metals in contaminated soils using molecular biology techniques.

■ On May 12, 2007, **Jennifer A. Summers** will graduate from the University of Idaho, College of Agriculture and Life Sciences, with a bachelor of science in food and nutrition, dietetics option. With over 1,000 hours of dietetics-supervised practice, she will take the American Dietetics Association exam to become a registered dietitian.

■ From September 2005 to January 2007, **Victoria Sutton, M.P.A., Ph.D., J.D., Lumbee**, served as the chief counsel for the Research and Innovative Technology Administration, a political appointment in the U.S. Department of Transportation. In addition to establishing the Office of Chief Counsel in the new administration, she led a government-wide ad hoc committee on the development of a regulatory framework for a hydrogen economy. Dr. Sutton returned to her tenured faculty position as the Robert H. Bean Professor of Law at Texas Tech University for the spring semester of 2007.

■ In December 2006, SACNAS Life Member **Lydia Villa-Komaroff, Ph.D.**, was appointed chief executive officer of Cytonome, Inc., ([www.cytonome.com](http://www.cytonome.com)), which develops, manufactures and markets clinical-grade optical cell sorting systems.



# Meet the New Ph.D.s of SACNAS

## **Anthony D. Aragon, Ph.D.**

adaragon@unm.edu

*Ethnicity:* Latino

*Degree Conferred:* Ph.D. in biology

*Institution:* University of New Mexico, Biology Department

*Dissertation Title:* Ready, Set, Go: Genomic Analysis of the Quiescent State in Yeast

*Thesis Advisor:* Dr. Margaret Werner-Washburne

*Research Interests:* Using genomic techniques to understand how cells survive different stresses

*Current Position:* CETI Postdoctoral Fellow, Biology Department, University of New Mexico (in the laboratory of Dr. Charles Cunningham)

## **Jaclyn Elaine Cañas, Ph.D.**

jaclyn.canas@tiehh.ttu.edu

*Ethnicity:* Mexican American

*Degree Conferred:* Ph.D. in environmental toxicology (August 2005)

*Institution:* Texas Tech University, The Institute of Environmental and Human Health/Department of Environmental Toxicology

*Dissertation Title:* The Development and Application of Preconcentration/Preelution Ion Chromatography Methods for the Detection of Trace Perchlorate in Difficult Matrices

*Thesis Advisor:* Dr. Todd Anderson

*Research Interests:* Analytical toxicology, environmental chemistry: using analytical techniques to characterize exposure, understanding how chemicals move in the environment, evaluating the toxicity of manufactured nanomaterials, and trophic transfer of heavy metals, such as lead, in the environment

*Current Position:* Assistant Professor of Environmental Toxicology, Texas Tech University (completed postdoc in 2006: Environmental Protection Agency, Western Ecology Division)

## **Christopher L. Chavez, Ph.D.**

clchavez@stanford.edu

*Ethnicity:* Mexican American

*Degree Conferred:* Ph.D. in molecular biology/genetics

*Institution:* University of California, Santa Cruz

*Dissertation Title:* Analysis of Vacuolar ATPase Mutants of *Neurospora Crassa* 9

*Thesis Advisor:* Dr. Barry Bowman

*Research Interests:* Gene therapy

*Current Position:* Postdoctoral Fellow, Stanford University

## **Otakuye Conroy, Ph.D.**

oconroy@lacsds.org

*Ethnicity:* Oglala Sioux

*Degree Conferred:* Ph.D. in environmental engineering

*Institution:* University of Arizona

*Dissertation Title:* Estrogenic and Anti-estrogenic Activity Present in Wastewater and Reclaimed Water

*Thesis Advisor:* Dr. Robert G. Arnold

*Research Interests:* Pharmaceuticals, endocrine disruptors and other emerging contaminants found in wastewater and reclaimed water

*Current Position:* Project Engineer, County Sanitation Districts of Los Angeles County

## **Dario Dieguez, Jr., Ph.D.**

dieguez@bu.edu

*Ethnicity:* Latino

*Degree Conferred:* Ph.D. in neurobiology

*Institution:* University of Texas at San Antonio

*Dissertation Title:* Modulation of CA3 Afferents: Aging, Theta, and LTP

*Research Interests:* The role of hippocampal single unit activity in episodic memory and how this activity is changed or compromised by normal brain aging

*Current Position:* Postdoctoral Fellow, Laboratory of Cognitive Neurobiology, Center for Memory and Brain, Department of Psychology, Boston University

## **Benjamin A. Garcia, Ph.D.**

bag@uiuc.edu

*Ethnicity:* Mexican American

*Degree Conferred:* Ph.D. in chemistry

*Institution:* University of Virginia

*Dissertation Title:* Proteomic Applications of Tandem Mass Spectrometry

*Thesis Advisor:* Dr. Donald F. Hunt

*Research Interests:* Proteomics applied to the characterization of post-translational modifications on chromatin-associated proteins

*Current Position:* NIH NRSA Postdoctoral Fellow, University of Illinois at Urbana-Champaign

## **Meda M. Higa, Ph.D.**

meda.higa@gmail.com

*Ethnicity:* Japanese, Filipino, Chicano, Native American

*Degree Conferred:* Ph.D. in oncological sciences

*Institution:* University of Utah, Department of

Oncological Sciences

*Dissertation Title:* Characterization of the Zinc Finger Domain of the Nuclear Pore Protein Nup153

*Thesis Advisor:* Dr. Katharine S. Ullman

*Research Interests:* Nucleocytoplasmic transport, nuclear envelope breakdown at mitosis, protein biochemistry, infectious diseases, virology, virus-host cell interactions

*Current Position:* Postdoctoral Fellow, Department of Microbiology, University of Pennsylvania (in the laboratory of Dr. Robert Doms)

## **Claudia Knez, Ph.D.**

claudia@astro.umd.edu

*Ethnicity:* Mexican American

*Degree Conferred:* Ph.D. in astronomy

*Institution:* University of Texas at Austin

*Dissertation Title:* Chemical Evolution of Ice and Gas from Molecular Clouds to Protostars

*Thesis Advisor:* Drs. Neal Evans and John Lacy

*Research Interests:* Star formation, chemistry, infrared astronomy

*Current Position:* Research Associate, University of Maryland, College Park

## **Kanthaiah Koka, Ph.D.**

kanthu@gmail.com

*Degree Conferred:* Ph.D. in biomedical engineering

*Institution:* Louisiana Tech University

*Dissertation Title:* Development of a High Spatial Selectivity Tri-Polar Concentric Ring Electrode for Laplacian Electroencephalography (LEEG) System

*Thesis Advisor:* Dr. Walter G. Besio

*Research Interests:* Signal processing, biomedical instrumentation, neural engineering, neuromodulation, EEG

## **Audeliz Matias, Ph.D.**

amatias@skidmore.edu

*Ethnicity:* Puerto Rican

*Degree Conferred:* Ph.D. in geological sciences

*Institution:* Northwestern University

*Dissertation Title:* Development and Modification of Impact Craters on Venus and Mars

*Thesis Advisor:* Dr. Donna M. Jurdy

*Research Interests:* Planetary geology, structural geology, tectonics, geodesy, geosciences education

*Current Position:* Visiting Assistant Professor, Skidmore College; Consortium for Faculty Diversity at Liberal Arts Colleges Postdoctoral Scholar

**Marisa Pulido-Covington, Ph.D.**

*covingt@musc.edu*

*Ethnicity:* Mexican American

*Degree Conferred:* Ph.D. in medical science

*Institution:* Texas A&M Health Science Center, Department of Pharmacology and Toxicology

*Dissertation Title:* Ischemia induced MT1-MMP Cleavage of Cadherins in Normal Rat Kidney Cells

*Thesis Advisor:* Dr. Alan Parrish

*Research Interests:* Acute renal failure, calpains, cell death

*Current Position:* Postdoctoral Fellow, Medical University of South Carolina

**Elisa V. Quintana, Ph.D.**

*equintan@umich.edu*

*Ethnicity:* Mexican American, Native American

*Degree Conferred:* Ph.D. in physics (August 2004)

*Institution:* University of Michigan, Ann Arbor

*Dissertation Title:* Planet Formation in Binary Star Systems

*Thesis Advisors:* Drs. Jack J. Lissauer and Fred C. Adams

*Research Interests:* Planetary science/astrophysics

*Current Position:* Scientific Programmer, Kepler Mission, SETI Institute NASA Ames Research Center; Research Associate, Space Science and Astrobiology Division, NASA Ames Research Center (where she recently finished a two-year postdoctoral position)

**Fatima Rivas, Ph.D.**

*fyassin@yahoo.com*

*Ethnicity:* Latina

*Degree Conferred:* Ph.D. in organic chemistry

*Institution:* University of California, San Diego

*Dissertation Title:* Studies Toward the Total

Synthesis of Norzoanthamine

*Research Interests:* Drug development

*Current Position:* IRACDA Postdoctoral Fellow, University of California, San Diego

**Chris L. Whittle, Ph.D.**

*cwhittle@monell.org*

*Ethnicity:* African American

*Degree Conferred:* Ph.D. in chemical ecology

*Institution:* University of Alaska, Fairbanks

*Dissertation Title:* Identification and Function of Male Moose Urinary Pheromones

*Thesis Advisors:* Dr. Thomas P. Clausen

*Research Interests:* Olfactory communication, pheromones, breath biomarkers of disease state

*Current Position:* Postdoctoral Fellow, Monell Chemical Senses Center

## SACNAS Readers Poll: Sustainability

You are invited to share your thoughts with the SACNAS community on sustainability, the topic of the next SACNAS News edition. Participate in our first readers poll online at [www.sacnas.org](http://www.sacnas.org) or send your responses to the following questions to [editors@sacnas.org](mailto:editors@sacnas.org) by May 1, 2007.

- 1 What is the number one challenge related to sustainability (regarding the environment, human health, finances, etc.) that our nation will face over the next 15 years?
- 2 In the next 15 years, what scientific research topic or area of science holds the greatest potential to positively affect our lives, increase sustainability, and/or overcome our biggest challenges?



## PROFILE

### JORGE RAMOS



**Discipline:** Ecosystem

Conservation

**Ethnic Background:** Mexican

**Education Level/Year in School:**

Postbaccalaurate (accepted into graduate school)

**Institution:** Ecological Society of America, Education Office

**Research Abstract:** I am interested in amphibians, which are currently experiencing a decline in population around the world. In graduate school, I will study ecosystems that are being affected by the decline in these populations. I will be looking at ecosystems to see if there are any changes in the higher trophic levels as a result of the lower population of amphibians, as well as, if there is any shift in population geographically—the biogeography of how the species are redistributing themselves because of global climate change or other anthropogenic effects. Also, I want to include in my research a linkage between the research and environmental policy.

**Do you have a mentor? If so, what is the most valuable/important thing you have learned from your mentor?**

I had a really good mentor in school, my professor Craig Tweedie. He is a young scientist, is motivated, has ambitious projects, and is very energized. He believes in all of his students. He trusts students and lets them do the work. His advice, that I will always remember, is that you should never pay for graduate school. So far I have followed his advice and it's working out.

**What do you enjoy most about your current position with the Ecological Society of America (ESA)?**

I am in the education office, the SEEDS student coordinator. The SEEDS program is the ESA branch that promotes diversity in the field of ecology. Our job is to recruit underrepresented minorities and expose them to ecology as a science. For example, every year we sponsor two field trips for students nationwide. We take them either to a Long Term Ecological Research

station or on an ecology fieldtrip associated with a university or agency. We also fund students to go to the ESA Annual Meeting and offer research fellowships for undergrads.

It is a rewarding job. Every hour invested in the students pays off when you have the opportunity to present all the opportunities to the students and they actually apply for them and they get one—either an REU or a fellowship or scholarship. That's one of the things I enjoy the most. Also, being in D.C. is interacting on a daily basis with scientists from every government agency, from non-profits, from faculty that come to the ESA office. I bump into them at congressional briefings or at events; networking is another thing that I really enjoy. Working with a professional scientific society and meeting more people in the field allows me to keep up to date with what is going on in science and policy. I also enjoy living in Washington, DC!

**What are your interests and experience in leadership?**

When Milka Montes and I returned from a SACNAS meeting in 2004, we knew that UTEP didn't have a chapter, but that there was a large community at UTEP that attended SACNAS. Our goal was to bring everyone together. As leaders we learned to listen and to communicate with everyone. Good leaders also should let the followers lead. So, we created the chapter to unite the students and faculty at UTEP. Also, leadership is about change; creating a chapter—we changed the UTEP science community for the better.

## PROFILE

### AUDELIZ MATIAS, PH.D.



**Discipline:** Geosciences

**Ethnic Background:** Puerto Rican

**Highest Degree Earned:** Ph.D.

**Career Stage/Professional Title:**

Consortium for Faculty Diversity  
Postdoctoral Fellow & Visiting  
Assistant Professor

**Institution:** Skidmore College

**Research Abstract:** Over the last six years my research has concentrated on the study of craters caused by asteroid impacts on the surfaces of Venus and Mars. Modification of the crater's anatomy can provide clues about the timing, extent and nature of geologic processes, such as volcanic activity, on these planets. Impact craters can also provide important evidence about the presence of ground-ice and possible liquid



water on Mars. Currently, I am expanding my research focus to include science education, especially that involving the Spanish speaking community. It is imperative that this population receive the necessary information regarding our planet in order to make informed decisions.

### *What are the challenges and rewards you encounter in your postdoc?*

Being a CFD fellow had given me the opportunity to learn about the special benefits of the liberal arts instruction. Two important challenges for me have been focusing on my research in a small department and the cultural differences between Chicago, where I lived during my Ph.D., and Upstate New York.

### *Who is your inspiration for developing as a leader in the sciences?*

My inspiration is my family and the Spanish-speaking people struggling in this country. Being able to make a difference is important to me. One of my dreams is to attain an academic leadership position that will allow me to help more Hispanics to succeed in higher education.

### *In what ways is your research important to our communities?*

Why is it important to study geologic processes on other bodies in the solar system? The exploration of the solar system is an extension of humanity's exploration of the Earth. The ability to study surface processes on other planetary bodies allows us to compare their environmental conditions as a function of current and past evolution.

## **PROFILE SANDRA BEGAY-CAMPBELL, M.S.**



*Discipline:* Civil Engineering / Energy Engineering

*Ethnic Background:* Navajo

*Highest Degree Earned:* M.S.

*Professional Title:* Principal Member of the Technical Staff

*Institution:* Sandia National Laboratories

**Research Abstract:** I provide technical assistance for tribes interested in renewable energy, particularly for solar and wind energy development. What this specifically means is that focus my efforts on listening to the tribes and I offer technical information about various renew-

able energy options. As I work with tribes, appropriate interaction and cultural sensitivity is particularly important because Native American culture is different from the mainstream society. I strive to properly portray the tribes' needs and effectively communicate renewable energy alternatives to decision makers.

### *What was the most valuable advice you have received from someone during your career?*

Stretch your existing goals. I wanted to be the executive director of AISES and my mentor said, "Okay, but why not be the President of University of New Mexico?" I served as the AISES executive director...and I just completed my tenure as the "boss" of the UNM president as a Board of Regents member.

### *Has there been a particularly challenging point in your career?*

When I decided to leave my position with AISES, I returned to Sandia Labs and needed to find some new challenges. It required some patience and persistence to find the right opportunity. I relied on my internal network of colleagues and friends to help me settle into my current position.

### *Besides conducting research, what other things do you do as part of your position?*

I give many presentations which includes public speaking in large venues. I enjoy networking with tribal energy folks and with tribal leaders. I also enjoy traveling to many tribal lands; I see the great potential and need for renewable energy development.

### *What are the leadership skills that you find most crucial to pursuing your career?*

Vital leadership skills are listening and knowing when to speak or be quiet. I am very patient and this skill is needed in working with tribal renewable energy development. My family helps me to be humble and to focus on thriving not just surviving as a Native leader.

*“The function of leadership is to produce more leaders, not more followers.”*

—Ralph Nadar

# 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 the marketing and advertising sales department at [info@sacnas.org](mailto:info@sacnas.org) or call toll free 877-SACNAS-1.

## Employment

### Joseph Stokes Jr. Research Institute at The Children's Hospital of Philadelphia

Stokes Institute is a world-renowned pediatric research center with a mission to advance the health of children by turning scientific discovery into medical innovation. Stokes is recruiting candidates for all research positions, including research technicians, research assistants, postdoctoral fellows, scientists and biostatisticians.

*More Information:*  
<http://stokes.chop.edu/>  
Children's Hospital job site:  
[www.chop.edu/careers](http://www.chop.edu/careers)

### UCLA Institute for Pure and Applied Mathematics: Director

The Institute for Pure and Applied Mathematics (IPAM) at UCLA is seeking its next Director, to begin July 2008. It is necessary that IPAM's Director possess sufficient scientific distinction to be offered a faculty position at UCLA. Candidates are asked to send a CV and cover letter to [directorsearch@ipam.ucla.edu](mailto:directorsearch@ipam.ucla.edu). For fullest consideration, applications should be received by June 1, 2007; however, applications will be considered until the position is filled. IPAM is an equal opportunity/affirmative action employer.

*More Information:*  
<http://www.ipam.ucla.edu/jobopenings/director.html>

## Graduate, Research & Summer Internship Opportunities

### 16th Annual Short Course on Experimental Genetics of the Laboratory Mouse in Cancer Research

August 19–30, 2007, The Jackson Laboratory, Bar Harbor, Maine  
This is a graduate-level genetics course for predoctoral and postdoctoral students as well as established investigators entering the field of mouse genetics. The course focuses on the mouse as an experimental tool in cancer research.

*More Information:*  
[www.jax.org/courses/events/current.do](http://www.jax.org/courses/events/current.do)  
Email: [nancy.place@jax.org](mailto:nancy.place@jax.org)

### Training & Scholarship Opportunities, Center for American Indian & Alaska Native Health, Johns Hopkins Bloomberg School of Public Health

We are pleased to offer a wide array of paraprofessional and professional training opportunities for both current and emerging American Indian and Alaska Native health professionals. Opportunities include: Scholarships for American Indians and Alaska Natives; One-Week Courses Specific to American Indian Health; Certificate in Public Health Training (credit or non-credit); Post-Baccalaureate Fellowship; Undergraduate Diversity Summer Internship; and Graduate Test Preparation Scholarship (GRE, MCAT, etc.).

Contact:  
Cathie Frazier, Center for American Indian and Alaska Native Health,  
621 N. Washington Street  
Baltimore, MD 21205  
Phone: 410-955-6931  
Email: [cfrazier@jhsp.h.edu](mailto:cfrazier@jhsp.h.edu)  
Website: [www.jhsp.h.edu/caih/](http://www.jhsp.h.edu/caih/)

### The Ecosystems Center, Marine Biological Laboratory, Woods Hole, MA

The Ecosystems Center is seeking joint applications from two minority students and a faculty member at colleges or universities serving underrepresented groups in environmental science to participate in the undergraduate Semester in Environmental Science (SES) during fall of 2007 (Sept. 2–Dec. 18). Faculty stipend and full financial support are provided.

*More Information:*  
<http://courses.mbl.edu/SES/>  
Email: [SES@mbledu](mailto:SES@mbledu)

### Summer Research at the University of Southern California

Spend 10 weeks carrying out research in our Chemistry Department. Work one-on-one in a lab with a faculty advisor and graduate student mentor. Includes weekly meetings on scientific topics, tours of research labs in the Los Angeles area, and planned social activities. A \$3000 stipend, housing, meals, medical coverage, and travel costs are included. Open to U.S. citizens or permanent residents. Please apply immediately.

*More Information:*  
[http://chem.usc.edu/undergraduate/summer\\_prog.html](http://chem.usc.edu/undergraduate/summer_prog.html)

### Center for Theoretical Biological Physics, University of California, San Diego

CTBP provides a very supportive and diverse environment for undergraduate/graduate students and postdoctoral fellows interested in interdisciplinary training and research in physics, biology, chemistry and mathematics. Prospective graduate students are encouraged to apply through the UCSD Office of Graduate Studies (<http://www.ogsr.ucsd.edu/>). Prospective CTBP postdoctoral fellows for 2007-2008 and Summer 2007 undergraduate interns are strongly encouraged to apply directly to CTBP.

*More Information:*  
<http://ctbp.ucsd.edu>  
Email: [ctbp@ucsd.edu](mailto:ctbp@ucsd.edu)

## Conferences

### The DyDAn Reconnect Conference

The Reconnect Conference, sponsored by DyDAn (the Homeland Security Center for Dynamic Data Analysis), reconnects teaching faculty to mathematical sciences research and exposes government and industry researchers to new topics. Reconnect will be held July 29–August 4, 2007 at Rutgers University with the theme Data Analysis in Law Enforcement and Homeland Security.

*More Information:*  
<http://dydan.rutgers.edu/Education/reconnect/>  
Email: [reconnect@dimacs.rutgers.edu](mailto:reconnect@dimacs.rutgers.edu)

# What do SACNAS Readers Want?

Minorities in the fields of science, mathematics, and engineering value the SACNAS News for resources and opportunities to further their education and career.

Our readers want more information about your programs, fellowships, and position openings. What better way to recruit than to advertise in or sponsor publication of the SACNAS News?



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**Contact**

[www.sacnas.org](http://www.sacnas.org)  
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*“Becoming a leader is synonymous with becoming yourself. It is precisely that simple, and it is also that difficult.”*

—Warren G. Bennis



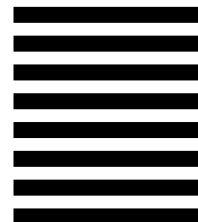
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# SACNAS

is our membership

## 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 Advancement

*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-ouncements 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
- 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
- Support students 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

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*Scholarships:*

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# SACNAS

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