

Brief Biography of
Joseph D. Andrade
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Joe Andrade was born on July 13, 1941 in Hayward, California. His grandparents were Portuguese who immigrated from the Azores Islands in the mid 1920's. After serving as editor of his high school paper and student body president, he attended the University of California at Berkeley for two and a half years. He then dropped out of school and worked for a while before completing his undergraduate studies at San Jose State University, majoring in Materials Science and Engineering. He attended graduate school at the University of Denver, Colorado on a National Science Foundation Fellowship, completing Ph.D. studies in Metallurgy and Materials Science in January of 1969. Joe and Barbara were married in 1966, shortly after Barbara returned from two years in the Peace Corps in Colombia, South America.

Joe joined the University of Utah as an assistant professor in a new Materials Science and Engineering Program in January of 1969. The appointment was half time. The other half of his time was with W.J. Kolff in the new Division of Artificial Organs in the Department of Surgery.

Over the years Joe moved up the faculty ranks and was appointed professor in 1978. He also accepted appointments and responsibilities in the Department of Pharmaceutics, College of Pharmacy, and in the Department of Bioengineering in 1972. Over the years he has served on many university committees. He has taught a wide variety of undergraduate and graduate courses.

He has managed and supervised a large research group during his 25 years at the University. During this time he has edited 6 scientific books, been awarded 5 patents, and published over 100 technical papers and book chapters. In addition to his undergraduate activities, 20 Masters and 16 Ph.D. students have received degrees under his supervision and sponsorship.

His technical and scientific work has always been of a highly multi and interdisciplinary nature, involving Medicine, Science, and Engineering. He holds faculty appointments in 3 different colleges and 4 different departments.

His scientific and research activities have provided many opportunities for travel and cultural expansion. He has friends, co-workers, former students, and related contacts in many countries, including China, Korea, Japan, the Czech Republic, and most Western European countries. These trips and interactions have provided him and his family with a broad and deep perspective and appreciation of peoples and their cultures.

Joe's interest and experience in university administration began in 1980 with his appointment as Chairperson of the Department of Bioengineering. He was appointed Dean of the College of Engineering by then President David Gardner just one month before Gardner left to assume the presidency of the University of California (July 1983). Joe served as Dean for four years during a period of budget and enrollment challenges. In his

first year as Dean he visited all of the public higher education institutions in the state to discuss pre-engineering activities and student transfer needs. He founded the state Pre-engineering Liaison Committee, which met regularly from 1984 to 1987 on issues related to transfer credits, pre-engineering courses, and program funding. He established a college Industrial Advisory Board and worked closely with the Regents and appropriate legislative committees to formulate a state-wide engineering initiative. The Advisory Board worked closely with the Governor's Department of Community and Economic Development to help formulate and establish the State's Centers of Excellence Program.

Joe was one of the co-founders of Biomaterials International in 1980, now the Salt Lake division of Ohmeda, Inc. This company employs some 75 people. He founded Protein Solutions, Inc. in 1988 to develop innovative materials for the teaching of science at all levels. His other industrial interactions include consultancies with major companies.

He was a co-founder of the Center for Biopolymers at Interfaces, a State Center of Excellence with 25 participating companies. He continues to foster close interactions between the University and the community it serves. He continues to be involved in university technology transfer and regional economic development, recently serving on the Governor's task force on Biomedical Industry Economic Development.

Joe resigned as Dean of Engineering, effective October 1, 1987, and was reappointed as Chairperson of Bioengineering on July 1, 1988. He declined to accept a additional 3 year term as Chairman in 1991.

Joe was on sabbatical leave in 1991-'92 to establish the Center for Integrated Science Education at the University of Utah. During his services as Dean and Department Chair, and based on his study of higher education, nationally and internationally, he became convinced of the need to enhance education at all levels. The Center for Integrated Science Education (CISE) was founded as a joint effort of the Colleges of Science, Education, and Engineering, focused on providing services and opportunities for practicing elementary teachers throughout the state and region. The Center has developed a variety of programs, including special 10 hour inservice courses ("Integrated Science Concepts and Themes"), novel educational materials, state wide contests to encourage students and their teachers to be involved in science and its integration in the curriculum, the establishment of the *Explore! Newsletter*, now in its third year of publication as a newsletter/activity newspaper distributed to all 10,000 plus elementary teachers in Utah. Joe receives no compensation or decreased teaching load for these activities. He spends about 100 hours per year providing inservice courses throughout the state of Utah. He has also established the Leonardo Laboratory within CISE as a facility for teacher inservices, for unique undergraduate courses, and for students working on a variety of science and arts projects.

His major community service activity is serving as Program Chair of the Utah Science/Arts Center, a major project to build a science/arts/technology, hands-on, interactive facility in the state of Utah, to open in about 1999 in Salt Lake City. The first phase of this project is Leonardo, a science/arts center on wheels which will travel the state in 1996, Utah's centennial year. Joe is now offering the third in a series of courses called "Science Projects for the Utah Science/Arts Center" to involve University undergraduate and graduate students in the design and development of interactive science/art exhibits and related activities.

Joe was recently named University Professor for 1994-'95. The University Professor designation is a one year appointment to develop courses for the Liberal Education Program. His two-quarter course, "Science Without Walls," is not being offered to a group of undergraduates with high science fears and anxieties. The course is an expanded version of the elementary teacher inservice courses which he has been offering for the past three years.

In order to take on these additional responsibilities with the Center for Integrated Science Education, the University Professorship, and the Program Chairmanship of the Utah Science/Arts Center, Joe had to significantly decrease the size of his research activities starting in 1991. He now manages and directs a much smaller research group consisting of about five graduate students and one technician. He finds that his research topics are now directed more by needs in science education, such as the development of unique intelligent materials for a Labless Lab™ in Polymer Science, a protein card for the detection of protein in non-invasively derived biological fluids such as urine and tears, and several other topics which would have significant benefits in science education, as well as providing new and novel technologies for application in health and medicine.

He also has a strong interest in effective communication. He taught a Spring, 1990 course in the Department of Communication titled "Critical Science Communication." He is completing a book, together with six students from earlier courses, titled *Science by Seduction: Communicating with the Disinterested*. Joe feels strongly that there are two major professional groups in society which are greatly under appreciated and under compensated and vital to the stability and well-being of society. The first group is elementary teachers, who educate the next generation; the second group is communication and journalism professionals, who communicate and hopefully educate the present adult generation. Both of those groups tend to be low on the pecking orders in large colleges and universities. Both tend to be underpaid and under appreciated. Both often have undergraduate degree programs seriously lacking in scientific and technological subjects and in the development of critical thinking skills. Both require the ability to effectively communicate and yet often do not develop the necessary communication skills in their college programs. Joe is now focusing a major part of his activities towards those two professional groups, as well as to the education and development of critical thinking skills in the general community at large.

While serving as Dean Joe became very interested and involved in higher education administration. He visited some 20 different universities in this country and some 7 overseas, inquiring and probing as to the role, mission, and directions of the university. He talked with presidents, vice-presidents, and deans and read many of the books and reports available on higher education and academic leadership.

Joe feels that colleges and universities must be leaders and catalysts in improving the educational opportunities for all of society. He further feels that college students should be motivated and prepared for their necessary roles as participants and leaders of their nation and their communities.

Summary of Administrative Experience

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- 1992 -- Present: *Chair, Program Committee, The Utah Science/Arts Center*; a 100 plus person committee charged with creating the program content of a new \$35M science/arts center.
- 1991 -- Present: *Director, Center for Integrated Science Education, University of Utah*, a 3 college, 10 department group enhancing science education at all levels, but with a particular focus on upper elementary (grades 3-7).
- 1994 -- Present: *Chief Scientific Officer, Protein Solutions, Inc.*, a small company developing and marketing novel projects for science education.
- 1991 -- 1994: *Vice President for Public Policy, American Institute for Medical and Biological Engineering*. Program Chair of 1993 Meeting in Washington, DC and editor of the book *Medical and Biological Engineering in the Future of Health Care*.
- 1991 -- Present: *Manager and Director of a research group* in bioengineering, materials science, and science education; 5 graduate students.
- 1988 -- ¹⁹⁹⁴ Present: *President and Chief Scientific Officer, Protein Solutions, Inc.*, a small company developing and marketing novel projects for science education.
- 1988 -- 1991: *Chairman, Department of Bioengineering, University of Utah*.

Established an Industrial Advisory Board for the Department of Bioengineering. The existence of this group helped encourage the State's Department of Community and Economic Development to establish the Governor's Task Force on the Biomedical Industry in Utah. Worked as part of that task force.

Established an annual newsletter for the Department of Bioengineering, which is distributed to over 1,000 alumni, colleagues, and friends internationally.

Developed industrial fellowship support for Department graduate students.

Developed additional fund raising initiatives.

Participated in dialogues on engineering education and on bioengineering education.

Assumed Chairmanship of the College of Engineering's Undergraduate Recruitment Committee to encourage Utah high school students to study engineering, science, and mathematics.

1983-1987: Dean, College of Engineering, University of Utah

1986-87:

Occupied new classroom building and a newly remodeled research and office building.

Enrollment finally down to 2500 target. Teaching loads adjusted to reasonable levels. College budget -- in spite of cuts -- up to \$7 million State and nearly \$15 million for research.

Continued efforts in support of the Utah Engineering Initiative.

On May, 1988, submitted resignation, effective October 1, 1987. Continued efforts to push for Engineering Initiative. Worked closely with my likely successor as Dean. He negotiated administrative support of Engineering Initiative prior to accepting the position.

1985-86:

Worked with the University Administration to institute a major budget cut due to a State and University fiscal crisis. Began the phaseout of one degree granting program; cut one department particularly hard in order to avoid serious damage to the other departments, which at that time were of demonstrably higher quality (the Department which was cut has subsequently been rebuilt using new Engineering Initiative funds). Encouraged the retirement and early retirement of about 5% of the faculty.

Worked with the Industrial Advisory Board, several Regents, and the state-wide Engineering Liaison Committee to develop and promote the Utah Engineering Initiative -- a proposal to enhance funding of technical programs because of their importance in improving Utah's ailing economy.

Brought formal disciplinary action against a tenured faculty member accused of plagiarism, student and faculty manipulation for personal gain, and other causes (after several years of hearings and deliberation the faculty member was dismissed).

Received a Title 7 grant from the Department of Education for improving teaching facilities in micro-electronics.

Encouraged expansion of the University Writing Program to include Engineering students and faculty.

1984-85:

Provided an increased budget and significant salary increases for a subset of the faculty. Raises were based on productivity and performance and ranged from 0% to 75%.

Together with the College's Industrial Advisory Board, authored legislation to establish a State Centers of Excellence program. An alumnus legislator introduced the bill. The Advisory Board worked hard for its passage. The Centers of Excellence concept was adopted by newly elected Governor Bangerter as part of his economic development program.

Continued efforts to decrease enrollment via elevated admission standards.

Increased the College's public and University visibility by an aggressive publications and speaker program.

Began to work directly with key Regents on issues related to the University and the College in economic development and the coordination of activities throughout the entire State System of Higher Education.

Visited *every* state institution of higher education in Utah to learn of their strengths, weaknesses and programs. Established a state-wide Engineering Liaison Committee to coordinate and to provide a strong base for enhanced funding of Engineering in the State.

Recruited one department chair and initiated searches for three other chairs.

Worked to stimulate the organization of Centers of Excellence.

Using new research grants as leverage, induced the Administration to provide significantly increased remodeling funds for existing and newly assigned space for the College.

Acquired a super mini-computer for the College and initiated efforts to network the College and the University.

Visited 17 different Universities and Colleges of Engineering (mostly due to invited technical lectures) and learned how different Colleges function and develop. Established the position of Assistant Dean for community and External Relations to expand and enhance College interactions with, and support by, the local community.

1983-84:

College of Engineering includes 100 faculty, over 3500 students, a \$5 million state budget, and a \$7 million research (non-state) budget.

Established enrollment controls by increasing admission standards and decreased enrollment to about 2500 students by 1987.

Established an Industrial Advisory Board for the College, composed of State business, industry, and political leaders.

Established the office of Assistant Dean for Industrial and Community Relations and a College Publications Office. Developed a permanent budget for both positions.

Negotiated the resignation of one Department Chair.

Supervised the design and construction of a new classroom building.

Worked closely with the Vice-Presidents and President to enhance University support of the College.

Began to work with key legislators and legislative committees regarding the role and importance of the College to the State.

Began the establishment of interdisciplinary Centers of Excellence in the College and in the University.

Established a number of student, staff, faculty (and an outstanding high school teacher) awards.

1978-1981: *Chairman, Department of Bioengineering, University of Utah.*

About 1972 -- 1991: *Manager and supervisor of a relatively large interdisciplinary and international research group* of ten to 25 people, \$200,000 to \$600,000 annual funding. Research activities span six academic departments in the University of Utah: Bioengineering, Materials Science and Engineering, Pharmaceutics, Educational Studies, Communications, and Medicine. International research collaboration has included colleagues from Sweden, France, Germany, Croatia (now Croatia), Czechoslovakia (now the Czech Republic), South Korea, Japan, China, Canada, and Portugal.

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Draft
Vision & Goals Statement
University of Utah
by J.D. Andrade

We will strive to be a *university*, an integral university, that embraces all of its colleges and academic units as an integrated whole, and not as a set of unrelated parts. We will strive to become a single community, maintaining its harmony and unity while reaching out to increase its diversity. We will be neither a small college, nor a large, impersonal, multiversity. We will focus, while at the same time maintaining breadth and diversity. And we need a name. We might call it the "Utah Experience", the "Utah Difference", the "Utah Effect", or the "Utah Philosophy."

Our societies have worked hard to achieve social integration, but we have not been very successful at intellectual integration. A *university* will foster intellectual diversity, cooperation and interaction between departments and disciplines.

It has often been said that the subjects of most dramatic change and development are those that occur at the boundaries between disciplines, or in the collaborations and interactions between two or more departments. I hope we can foster and achieve more inter and multi disciplinary intellectual integration and development at Utah.

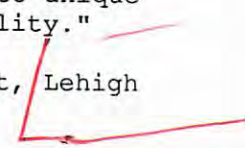
I once read a book whose title I can no longer remember, that said "Society has problems, universities have departments". We want to make it possible for our faculty and students to address and solve problems, largely independent of departmental borders, walls, or other barriers.

We will also strive for a more complete integration between teaching and research, insuring that our outstanding researchers are also in the classroom where they can motivate, inspire, and develop another generation of outstanding leaders, teachers, and researchers. We must also encourage all of our faculty to participate in, and to enjoy, the adventure and stimulation of research and other forms of scholarly activity.

We will enhance the communication skills of all of our students and the teaching skills of all our faculty and staff. We expect every member of our faculty to be a truly excellent teacher. We further expect every future graduate of this institution to be an excellent communicator and equipped with the other skills necessary to assume positions of leadership and responsibility in society.

An integrated and unified university, in philosophy, culture, and organization, will permit us to continue to be able to respond to unique opportunities and problems -- to maintain an "institutional agility."

(Based in part on some writings by Peter Likins, President, Lehigh University)



*Dream
Academic*

Interests, Objectives, and Philosophy

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A. V. DEADE

"The University Presidency Today" is the title of an editorial by S. Muller, President, Johns Hopkins University (Science 237: 705, 1987). Muller suggests in reference to today's university presidents that "None of us is a great leader, none the present voice of conscience or inspiration of the highest learning. We are perceived ... as lacking the aura, the eccentricity, the genius of greatness." Muller goes on to list and describe the many time-consuming duties of the presidents of large research universities. This editorial is symptomatic of the problems in higher education today.

The University is vital to a free society. It is the educator of the next -- as well as the current -- generation. It stores, evaluates, interprets and transmits knowledge. But a university must be still more. It must have the foresight and perspective to prepare its constituency for tomorrow. It should anticipate societal problems, changes, directions. A university must lead -- and university presidents must lead. A president who tends to all the details of the presidency is an administrative technician unless he/she is also a leader and a scholar.

Society expects universities to have two major qualities: Excellence and leadership. Excellence is discussed beautifully by John W. Gardner in his little book of the same name (W. W. Norton & Co., 1984). It should be required reading for every university administrator.

Leadership is rarely discussed. A president must be the spokesperson for his or her organization. The president represents the organization. The president represents the university to the faculty, students, governor,

legislature, regents, alumni, and to other constituents. The perception of the president eventually influences the perception of the university.

Peters and Waterman (In Search of Excellence, Harper and Row, Publ., 1982) studied "America's Best-run Companies." Although their conclusions may not directly apply to universities, there is much one can learn from their observations.

One such observation is that an organization reflects the guy at the top. The president appoints the vice-presidents, who in turn appoint the deans, who influence the selection of chairs.

I have been on the faculty of a major university for 20 years. As a faculty member, I expect my fellow faculty and my administrators to be people I can respect and look to for leadership and guidance. As a department chairman and as a dean, I expect the president, provost, and vice-presidents to be scholars, and leaders promoting excellence in all endeavors.

A university is both "A Free and Ordered Space" (A. B. Giamatti, W. W. Norton Co., 1988). Faculty want their individual and collective freedom, but they also, in general, expect their administrators to provide a departmental, college, or university perspective -- and appropriate goals and decisions.

I feel strongly that public education in general -- and higher education in particular -- have been very ineffective in meeting the needs and expectations of society. We all like to complain and criticize the shortcomings of our society -- the poor education our students have received, the sorry state of the media, the lack of integrity of many of our business and public officials, the litigious nature of our society and of the law profession, etc. Is it not the colleges and universities who educate the teachers, the journalists, the

business and political science majors, the lawyers, etc.? We have no one to blame but ourselves.

"Standards are contagious. They spread throughout an organization or a society." (J. Gardner, Excellence, 1984). Gardner goes on to say (pp. 148-9)

that:

"Good teachers and good leaders share a bit of knowledge that is not universally recognized. They know that if they expect a lot of their respective constituencies, they increase the likelihood of high performance . . . 'Expect a lot, get a lot.' That means standards, an explicit regard for excellence. In a high-morale society, people expect a lot of one another, hold one another to high standards. And leaders play a special role in conveying such expectations. Good leaders don't ask more than their constituents can give, but they often ask -- and get -- more than their constituents intended to give or thought it was possible to give."

Excellence is operating at the limit of one's abilities -- constantly "pushing the envelope," as Chuck Yeager might say. "There is a kind of excellence within the reach of every institution." (Gardner, P. 100), of every department, of every faculty member, and of every student. Excellence is not being number one -- excellence is knowing you are giving it all you have. That takes motivated and excellent teachers, professors, and administrators.

How can a university provide leadership for its constituency: I think there are three key ingredients:

1. Integrity, Objectivity, Honesty, and Openness. I've seen too many administrators who attempt to hide facts from their faculty and from their legislators. Truth is safe -- and leads to respect and support. I've seen too many administrators who cannot say no -- and some afraid to say yes. Universities, and their administrators, must be able to say -- clearly, crisply, and objectively -- yes or no.

2. Excellence, Motivation, and Standards. J. Gardner has covered this topic very nicely.

3. Relevance. A state university is supported in large part by the state -- by taxpayers, many of whom have had no university or college experience themselves. They expect numbers 1 and 2 (above), but they also expect the university to be responsive to their needs and concerns.

University administrators and faculty must interact with the community. They must be able to communicate with the "uneducated" as well as with the university community. The President must be a media personality -- he/she is the spokesperson for the institution.

It is the university's obligation and responsibility to show, to demonstrate, its positive impact on society. This is most easily done in the area of economic development and interaction with the business and technical community. But it must also be done in all other areas of the university. Objective professors generally have no serious problem in communicating. It's the un-objective ones who present the real challenge for presidents and other administrators. Again, if the president genuinely cares about the community, most of the faculty will learn to care.

Why do I want to be President of a major University?

I'm an interdisciplinarian. I love working in many different fields, and at the boundaries between disciplines. Although most of my experience is in the sciences, I have strong interests in philosophy, communications, cultures, and languages. The opportunity to interact with, and to represent, faculty in all disciplines is attractive and challenging.

I'm a reasonably efficient manager and have learned to handle many projects at the same time. I know how to delegate. I learned how to evaluate

and select people. The President must be responsible for everything, although he/she must delegate, there must be very effective and efficient follow-up.

I've learned how to interact with a governor, with legislators, regents, and business leaders; and am learning how to raise private funds. I enjoy speaking to groups, and enjoy negotiating and persuading -- even some arm-twisting, when necessary.

I've learned how to listen, to negotiate, to compromise. I know how to say no, and when to say yes. My leadership qualities have been demonstrated at the college level. I now look forward to demonstrating them at the university level.

Why Oregon? Oregon, like Utah, has a positive reputation, even a mystique. You are the most environmentally conscious state in the Union. Environmental issues will probably be the dominant topic for universities and for the country in the decade of the 90's. You have a strong liberal arts and liberal education tradition. The University's foremost objective is to produce an educated, informed citizenry. The University of Oregon is large enough to be challenging, yet small enough to be manageable. You do not have a Medical School and Engineering College to worry about, for example.

You are a somewhat liberal institution in a perhaps conservative state. That's challenging. I've read Confrontation by K. Metzler. I am curious as to why you're searching for a President again. And, if given the opportunity, I will certainly ask many people about that issue. I think I can relate to, and communicate with, conservatives as well as liberals; educated as well as less-educated; engineers as well as humanists. My father was part of the so-called silent majority. He would even qualify as a "red-neck," and never finished his freshman year of high school. My brother is a truck driver.

The University of Oregon appears to have significant interdisciplinary activity. I'm interested in your Institute for Molecular Biology and the Materials Science Institute -- both areas I can relate to technically. I think the establishment of the Neurosciences Institute and Advanced Science and Technology Institute reflects an awareness of important areas and needs. Your programs in International Studies and the Institute for Industrial Relations demonstrate relevance and enhanced opportunities. Your new grant from the National Endowment for the Humanities demonstrates your continued commitment and strengths in the Humanities.

I am personally aware of the work of several of your outstanding faculty: O. Hayes Griffith (Chemistry), W. Peticolos (Chemistry), and B. Mathews (Physics). You have 300,000 alumni -- an enormous resource for fund-raising and good will.

Eugene and the surrounding countryside appears to be a pleasant and reasonable place to live.

My wife, Barbara, and I have been in Utah for 20 years. The University of Utah and the state of Utah have been very good for us, but it may be time for a change. Our two sons are in college: one at Reed in Portland and at the University of Utah; the other a freshman at the University of Oregon. I am in good health and have the strength and motivation to take on such a demanding and challenging job.

In summary, I'm interested. I'd appreciate the opportunity to learn more about the University of Oregon, the state of Oregon, and the position of President.

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