

**b. Leadership:** Have you held a leadership position in any organization, activity, class, business, etc. in the areas mentioned above or other areas not mentioned? Give dates and approximate hours per week involved.

Assistant to President & Student Liaison, American Institute of Chemical Engineers (AIChE): 5h/w, FA95 - ...  
Co-former and writer of constitution for USC Gaming Club, Established FA96: 5+h/w

Yes  No

**c. Volunteer Work:** Have you participated in activities or volunteer organizations which benefit a community or society?

LAC-USC Perceptorship Volunteer; FA94 -  
San Juan Capistrano Excavation Team; 1986, 1992

**d. Arts:** Describe any artistic endeavors (theater, visual arts, music, writing, etc.) Give dates and approximate hours per week involved.

University Singers: Northern Arizona University, FA92-SP93  
Fountain Valley HS: Troubadours (elite choir), Concert Choir  
Musicals: Music Man, Cats, Chorus Line, The Wiz  
All American Boys Chorus: With this elite choir I toured much of the US, Canada, Austria, Romania, and the Soviet Union.  
Also have performed at weddings.

**e. Involvement:** Have you been an active member in any organizations, classes, activities, etc. in the areas mentioned above or other areas not mentioned? Give dates and approximate hours per week involved.

International Style Ballroom Dancing Team, FA95 -  
Have sat in at LAC-USC Hospital Ethics Committee discussions  
College Republicans, FA93 -

Yes  No

**f. Entrepreneurship:** Have you initiated any new programs, activities, classes, business endeavors, team sports, expeditions, etc. in the areas mentioned above or other areas not mentioned? Give dates and approximate hours per week involved.

My work on Scrubbing Column Packing has already lead to a patent (under my name/advisor): implementation of this technology is currently underway.  
Co-former and writer of constitution for USC Gaming Club (FA96)  
Redesigned USC Tram route to accomidate more students and allow more efficient transportation (FA96)

Yes  No

**g. Did you receive any awards, special honors or citations for any of these activities or other endeavors? Did they result in any publications, special reports, public exhibitions, performances, etc?**

Two publications are in the works with myself and Dr. Rieke for our work in Nucleation Theory and Coating of Scrubbing Column Packing. My experiments with nucleation were on display at Pacific Northwest National Laboratory. DOE awarded me as a distinguished student researcher.  
I have also placed in several science fairs including CA State.

**NAME** David J Rodecker  
**SSN** 608-05-8997

**h. Did any of these activities have particular significance for you? If so, what was the impact?**

Being the developer/inventor for the modified packing material I was especially excited when I realized it worked. The potential for this product is not only a dramatic savings for industrial plants, but also that the off-gas pollutants would decrease. My contribution can lead to an amazing relief on environmental clean-up problems.

**4a. List meaningful involvement in medical settings (e.g. hospitals, nursing homes, hospices), and describe your activity for each. Give dates and approximate hours per week involved.**

Only active involvement is through LAC-USC Hospital:  
Perceptorship in Internal Medicine and Emergency.

**b. Why was the above of special significance? Please describe.**

I have participated in this Perceptorship for my own experience. My decision towards medicine has become solidified. Though I have been involved in the medical arena through much of my life, I wanted to ensure that it was indeed a fulfilling workplace.

**5. Please give the names, addresses and phone numbers of your significant advisors, projects supervisors or other mentors who are qualified to evaluate your performance in the activities cited under sections 3 and 4. We may wish to contact one or more of them in order to enhance your application.**

Dr. Peter C Rieke, (509)375-2833, Pacific Northwest National Laboratory, P.O. Box 999, Richland, WA 99352

Rieke was advisor to Nucleation, Packing Materail, and Hydroxyapatite deposition studies. 1/15/96 - 8/20/96

Dr. Selim Senkan, (310)825-9063, UCLA Chemical Engineering Department Head, 1269 Warner Ave.: Low Pressure Combustion.

**6. Employment History: Please list all of your paid work experience during (and since) college, whether or not you have included it in your AMCAS application. Please list most recent work first. Be specific and complete. Give dates and approximate hours per week involved.**

USC Engineering Tutor, 18h/w, 9/20/96 -

PNNational Laboratory, 50+h/w, 1/96 - 8/96

UCLA Chemical Engineering, 50+h/w, 6/95 - 10/95

KOLL Management - Temp Commercial Property Manager, 40h/w, 4-6/95

Talent Tree, 40h/w, Administrative Assistant, 6/94-6/95

**7. How do you plan to support your medical education?**

In future years I aspire to be involved with the MSTP. Student Loans and personal contribution.

10. *Additional information: You may use this space to provide information that is not given elsewhere in this application or in the AMCAS personal statement. In addition if your education has been interrupted? You can use this page to explain.*

From 1/15/97 to 8/17/97 (not enrolled in school): Research Fellowship at Pacific Northwest National Laboratory in Biomimetics program under direction of Dr. Peter C. Rieke. While at this national DOE institution I focused on the application of biomimetic coatings.

Biomimetic coating as applied to scrubbing column packing. In view of the significant increase of hydrophilicity obtained with  $\text{SiO}_2$  surface, I considered the possible application to increasing the efficiency of industrial scrubbing columns. Scrubbing columns utilize high surface areas of water to equilibrate and dilute trace gases from air. These are commonly used in most chemical and industrial plants so as to conform to environmental regulations. Deposition procedure was modified so that the polypropylene packing material could be coated. I personally developed this process, built a small scale scrubbing column, and tested the new packing material. Separation was found to increase from 30% to 60% depending on column conditions. Dr. Rieke is now seeking outside company contracts to collaborate with government to study the mass production of biomimetic coating on this packing material. On November 22, 1996 Dr. Rieke and I applied for this invention submission and a publication is underway.

Surface wettability and its relation to nucleation. Van-Oss-Good theory describes the theoretical surface energies that initiate nucleation (solidifying). I manipulated Silicon Oxide surfaces to increase its surface base, acid, and Lifshitz-Van-der Waals interactions with a given solvent such as water, formamide, and methylene iodide. Nucleation behavior was found to be dependent on these surface energies, but confirmation of VOG theory is not exactly straight forward. Dr. Rieke and I are currently compiling and analyzing the data. A publication is in the works.

Hydroxyapatite (HAP) deposition onto prosthetic limb media.

I developed kinetic models to determine the optimum conditions such as: temperature, ionic strength, and calcium/phosphate concentration to deposit HAP (a major component of human bone). This development has lead to studies of mass production for thick-film HAP deposition, furthermore, with this information Dr. Allison Campbell now is studies the potential of in-vivo HAP matrix formation.

Additional Information

I have completed 85 units at USC as a Chemical Engineer/Biochemist and maintained a 3.93 GPA. It should be noted that my AMCAS GPA (of 3.76) reflects transfer work which is only considered as credit (not grade) toward my USC undergraduate education. Many of these transfer courses include music classes and have no bearing on my degree.

Regarding my MCAT Verbal scores: I have always had difficulty with speed reading and have been challenged by dyslexia. However my grades will substantiate the fact that I am able to excellently comprehend what I read when I have sufficient time to do so.