JUST A SMALL COLLECTION OF JQ'S BEST LETTERS

[Listed alphabeticallyby author]

"He completely embodies the incredible scientist who can do it all in the field, lab, and classroom…"
–sent by Jason Barnes

"His students face the world with a set of values that, taken together, are uniquely Jay-like — curiosity, determination, integrity and perserverance."
–sent by Nathan English and Christa Placzek

"Jay regards teaching and research not as separate entities, but as entities that are intimately intertwined."
–sent by Julie Hamblock

"It is his high expectations which produce high results and high effort from his students."
–sent by Leslie Hsu

"Jay will continue to conduct his science and to teach to his own high standards. He knows no other way."
–sent by Naomi Levin

"Dr. Quade will tirelessly teach both in the laboratory and on the outcrop to a degree that is above and beyond the call of duty."
–sent by Jeff Pigati

[Letter from Jason Barnes]

I am writing you to recommend Dr. Jay Quade of the Department of Geosciences for your Graduate Education and Teaching and Mentoring Award.

I am a second year graduate student in the same department, where Jay serves on my doctoral committee and from whom I've taken 2 classes: Soil Geochemistry, and currently Quaternary Geochronology.

Within the department, Jay has the deserved reputation of being an excellent teacher whose classes are very rigorous, intellectually stimulating, and of the highest quality. His classes are the ones that I use as an example of 'getting more than your moneys worth' when talking about the quality of graduate education at the University of Arizona. I believe he is one of the key figures in helping U. of A. geosciences to continue to garner its reputation as the seventh best graduate program in geosciences in the country.

He is very accessible and approachable as a professor regardless of one's status. Every interaction I have with Jay pushes me to think more critically and at a higher level of intellectualism about whatever it is we are discussing. His teaching ability is nearly unparalleled in all of my years as a student. His enthusiasm for class material, research, and geoscience in general is highly contagious. All of these characteristics have resulted in me admiring him as a mentor and role model. He completely embodies the incredible scientist who can do it all in the field, lab, and classroom, as well as possess the people skills to communicate it all to collaborators, students, and colleagues effectively. His integrity, open-mindedness, objectivity, and ability to admit his mistakes (albeit a rare occasion!) as a scientist is almost unprecedented.

I feel privileged that I am a member of the same department as Jay and hence get to know him and absorb some of his knowledge and approach to science. I rarely recommend people for awards for anything, however, I couldn't more strongly recommend Jay for this award.

Sincerely,
Jason Barnes

[Letter from Nathan English and Christa Placzek]

We would like to recommend Jay Quade for the Graduate Teaching and Advising Award. Jay was my MSc. advisor and is one of my wife's PhD. advisors. We have interacted with Jay as students and professionals now for over 4 years and on three continents. It is hard to say too many good things about Jay, however, many of his best qualities — his excitement and dedication to teaching, his drive and ability to motivate students to do hard and interesting work, his care for and generosity to his students and colleagues and his scientific integrity and knowledge — are best illustrated with stories and examples of how he interacts with his graduate students.

Dr. Quade's dedication and excitement for teaching is legendary. His classes are considered some of the most useful classes by geology graduate students in the department. They are taught at the highest level, always well prepared, based on modern literature and engaging. He will frequently invite scientists who are leaders in their field to lecture in class. Graduate and undergraduate students are encouraged to carry out original and useful research relevant to their field as class projects. Like his classes, his talks on the Himalaya and early human geology in Ethiopia entrance audiences and are well prepared and interesting. Dr. Quade's excitement for geology is not constrained to the classroom. I remember one day in central Nepal, on a dusty, bumpy road, Jay spent the better part of an afternoon teaching me chemistry, asking me questions, developing concepts with his arm slung over the front seat, looking back at me. I was exhausted trying to keep up, but he never got angry, was always humorous and continued "the lessons" for the entire 275 km trek. I learned more from him in one month than in an entire two years in the classroom.

In the field, Jay's principles are simple: work hard; no rest days; go where no one has gone before; fortune favors the bold; collect lots of samples and walk fast — really fast. No other advisor I know works so hard or under such adverse conditions. Jay will walk miles to get to an important outcrop, and then he will sit down and take incredibly detailed notes under a blazing sun. On an unheated overnight bus through Bolivia, where winter temperatures fall below 0° F, Jay put his sleeping bag on the roof and the rock samples in his lap so they would be safe. One evening, during a particularly difficult titration beside a river, we worked until an hour and a half after sundown getting the correct alkalinity. At the climax of our trip, we went for three days without anything to eat except a small portion of twice boiled stinging nettles, rice and five potatoes. He and I swam a wide river to collect one important water sample (Jay got dysentery from that swim and was the specter of death for two days afterwards). I've never seen Jay lose his temper. Neither Nepali bureaucracy, Bolivian bus schedules nor illness can fluster him. Jay Quade is the guy you want standing beside you when the natives go medieval or a season's worth of fieldwork is lost with the luggage (he photocopies everything <u>before</u> leaving the country). Most importantly, Dr. Quade has taught his students how to do field work by example. All of Jay's students never work at the same pace again after going with him into the field. His students are the hardest and hardiest workers in the field of Geosciences today.

Jay doesn't just teach his graduate students, he helps them through a myriad of field, technical and academic problems as well. He CARES about his students in particular and about students in general. Again, in Nepal, while we were on starvation rations a student fell behind the caravan and was lost. That evening, Jay was genuinely worried. The next morning before dawn, Quade put down his research and ran out of camp with a contingent of Nepali porters to track down and return the lost student. The undergraduate student wasn't working on Jay's research, wasn't his advisee, but to Jay he was the most important person in the world that day. Even in mundane matters, Jay supports his students in their efforts to secure funding, to get the classes they need and to attend meetings. Dr. Quade will spend days editing publications with his students, showing them what and how to edit an article for publication.

Dr. Quade's scientific generosity, integrity and ability are exceptional. If they are the author, his students get lead author on the papers they write with him. His students are free to argue with his interpretations, to share their ideas, and discuss results with no fear of retribution. Jay shares students freely and openly with other advisors, always putting in more time than he is required to spend. Although he is humble, he always expects the best work from his students, he pushes them to learn more through basic research and he is never surprised when his students teach him something. He is careful to praise his students when their research and work deserve it and guide them carefully if the work is in danger of foundering. Dr. Quade's capable mind reaches far beyond science. He frequently talks about world history, reads historical accounts of early 18th century exploration and, indeed, names his children after Roman and Greek emperors. It's rather annoying, but if you're his tent mate in the field expect to be awoken an hour early by Jay hunched over a language book and practicing the local dialect aloud.

Finally, the best comment on Jay's ability to mentor graduate students is that many of his former students are now his present colleagues. Lois Roe, Nat Lifton, Jeff Pigati, and myself have all come back to collaborate on and discuss research with Dr. Quade (and be a student again in Jeff Pigati's case) after having received our degree from the Department of Geosciences. His students publish in distinguished journals such as Science, Nature, Proceedings of the National Academy of Sciences, Quaternary Research and many others. When they graduate, his students face the world with a set of values that, taken together, are uniquely Jay-like — curiosity, determination, integrity and perseverance. We strongly recommend him for the Graduate Teaching and Advising Award.

Sincerely,
Nathan English &
Christa Placzek

[*Letter from Julie Hamblock*]

I would like to nominate Dr. Jay Quade of the Department of Geosciences for the University of Arizona *Graduate College Graduate Education Teaching and Mentoring Award*. I am a second year Master's student majoring in Economic Geology, a field of geology quite unrelated to Jay's interests in soil geochemistry and global paleoclimate. Last spring I took *Isotopes and Paleoenvironments*, a class jointly taught by Drs. Jay Quade and David Dettman. The fact that this nomination comes from a student who has taken only one course with Jay emphasizes his positive influence on students throughout the Department of Geosciences. In a prestigious research institution like the University of Arizona, a professor who balances well both teaching and research is rare. Dr. Jay Quade is a stellar example of such a professor.

Jay is a person who expects excellence from himself and from his students. His classes are intense and interactive. He pushes his students to think by asking difficult questions and not allowing students to passively listen but rather encouraging them to actively participate in discussions. Jay does not talk *at* his students but rather *with* them. Although he has spent many years contemplating the issues discussed in class, he is still open-minded and willing to listen to students' comments and assess them as valid or flawed. Jay is critical, yet not condescending. He works patiently with his students until they understand the ideas presented in class. An example of Jay's interactive and hands-on approach in the classroom is our final project in *Isotopes and Paleoenvironments*, where we were given the opportunity to work in Jay's isotope lab at the Desert Research Lab at Tumamoc Hill. Members of the class collectively spent one day in the lab becoming familiar with the equipment and learning techniques for carbon dioxide (CO_2) extraction from calcium carbonate ($CaCO_3$). Each member of the class then worked one additional day in the lab separating CO_2 from $CaCO_3$ in their own samples. After everyone had analyzed their samples, our group reassembled to present the results of our analyses and to discuss what they may signify. Such hands-on experiences are critical in graduate education where students may not otherwise have the opportunity to not only learn about but to actually perform the analytical techniques available to them for their own research.

Jay's method of teaching CO_2 extraction truly impressed me and reflects his overall approach to teaching. Rather than handing us a "cookbook recipe" to follow, Jay made us think about and understand why we were doing each step of the process. He barraged us with his never-ending questions and hypothetical situations. What would happen if we opened both of these valves at this point? What if we opened this valve before we opened the other one? Is this pressure where it should be? What is an explanation for the pressure being so high? Where is all of the CO_2 in the line now? This method of teaching encourages students to actively assess and understand what is happening at every moment and to realize when something is wrong.

Jay is a person who leads by doing rather than simply talking. He is a great role model and example for everyone in the geosciences community. He is always willing to meet with students outside of classroom if they have questions or problems. Jay is very approachable

and makes students feel comfortable around him, which indicates that he is very confident and comfortable with himself. Most importantly, Jay is enthusiastic, upbeat, and motivating. In the classroom, Jay talks excitedly about his own research and shows pictures of places he has worked throughout the world. Indeed, Jay's enthusiasm for science and geology is contagious.

The University of Arizona is renowned for its high level research. Accordingly, many professors consider teaching a secondary obligation fulfilled in exchange for the opportunity to conduct research. Jay is different in that he regards teaching and research not as separate entities, but as entities that are intimately intertwined. He actively involves graduate students in his own research and considers them an invaluable component of his research team. To Jay, graduate students are colleagues. For my CO_2 extraction project, I did not have samples of my own to run, so Jay and Naomi Levin, one of his Master's students, provided me with some of their samples from Ethiopia. I was quickly incorporated into their project as a major contributor and was made to feel that my results were of ultimate importance.

Jay treats all of his students with respect and care and in turn is treated the same. When learning the CO_2 extraction method, we were warned that removing one of the glass vials from the CO_2 extraction line at a certain point was difficult because it was under a slight vacuum. Despite this warning, I managed to break the glass vial and cut my hand. At the time, Jay jokingly commented that I would have a chance to redeem myself when I came back to run my own samples. However, by the time I returned to the lab, Jay had devised an alternative procedure in which the beaker was not under vacuum when it had to be removed. I was incredibly impressed and grateful of Jay's innovation in thinking of an alternative rather than thinking "this is how it has always been done, this is how it will continue to be done, and we will just have to be more careful next time." I think this incident demonstrates well Jay's caring nature.

I encourage you to seriously consider Dr. Jay Quade for the Graduate College *Graduate Education Teaching and Mentoring Award*. Jay is a great teacher and a person who shows respect towards everyone he encounters. He holds a high level research position yet doesn't hold himself on a pedestal. Jay is highly esteemed by colleagues and students alike, and his love for his work is reflected in his enthusiasm and excitement. The students and faculty of the Department of Geosciences would appreciate the opportunity to acknowledge and thank Jay for all he has done for the department. This award is also a great opportunity for the Graduate College to recognize a person who reflects the multi-faceted faculty which gives the University of Arizona its reputation as a great research and teaching institution. Thank you.

Sincerely,
Julie Hamblock

[Letter from Leslie Hsu]

I am writing to nominate Professor Jay Quade for the 2001-2002 Graduate Education Teaching and Mentoring Award. Although he is not my main advisor, Jay has been an important part of each of the three semesters that I've been here at the U of A. I hope to convince you of the great positive influence he has on graduate students in the Geosciences Department and even beyond.

In addition to his undergraduate teaching load, Jay has taught a graduate course for the past three semesters. I have been enrolled in two of these: Soil Geochemistry and Quaternary Geochronology. Jay had the ability to fill both of these classes at the ungodly hour of 8:00 AM because of his overflowing enthusiasm and knowledge. Even though I don't like chemistry, I enrolled in these two classes and sat in on his third class — Isotope Geochemistry, because I knew he would make the subject interesting. These classes have been the most challenging courses I have taken here, Jay does not water-down the classes even for the undergraduates who participate in the graduate course. It is his high expectations which produce high results and high effort from his students—who come to take his class from not only the Geosciences Department, but also Anthropology, Hydrology, and Soil Sciences.

Besides his teaching ability, Jay is a wonderful mentor to graduate students. He is a member of my committee and was extremely helpful in advising me during a particularly trying situation earlier this semester when I thought everything was going wrong. He always maintains a good perspective, acknowledges his own deficiencies (which I think he just imagines exist), and is caring and encouraging to the confused graduate student.

Just last week, Jay volunteered his time at a reading group meeting that six of us geoscience grad students had formed. We were reading and discussing a recent publication of his, and of his own accord, he suggested that he meet with us and show us slides of his field work. So at 4 P.M. on a Thursday afternoon, when he could have been running samples or reviewing manuscripts or whatever else professors are busy about all the time, he gave six graduate students a slide show, explained parts of his research that weren't included in the publication, told us anecdotes, and basically just passed down his infinite wisdom. After the slides, he asked the students that he didn't know about their research and gave us some advice that he had accumulated during his own graduate career.

I don't know how Jay manages to complete all the daily requirements of being a professor in addition to all I have explained in this letter. I know that respect for him is widespread in this university, illustrated by the two standing-room talks he has given on campus this semester.

Jay is a great role model for graduate students and I don't know how there can be anyone else more deserving of this award.

Thank you for your time.

Sincerely,
Leslie Hsu

[Letter from Naomi Levin]

Jay Quade has earned this award for excellence in graduate teaching and advising. Under Jay's teaching and advising, students critically engage Quaternary science and gain a thorough understanding of methods and applications. His classes are rigorous, and his advising provides guidance and cultivates independence.

Jay's classes engage science as a dynamic process. The material covered is never a packaged story. The classes are lecture and seminar hybrids; Jay provides thorough background information on a topic and the students cover the topic by presenting papers. Jay expects students to read and present the papers with the same rigor he does. He creates a critical atmosphere that encourages students to examine the assumptions and interpretations of the papers with appropriate skepticism. Students who take Jay's classes might secretly bemoan the workload but they acknowledge at the semester's end that all their efforts were worthy investments.

Students respond positively to Jay's classes and step up to the work because they know that their investment is matched by his. Jay's thorough feedback on problem sets, tests and papers reflects his commitment to student understanding. Jay holds high standards for student work. When he comments on papers, the pages are covered with his suggestions for improvements in the presentation and content. This kind of substantive criticism is fundamental to student learning.

As I work with Jay on my Master's project, I continually am appreciative of the way in which he guides his advisees while allowing us to pursue our own ideas. Jay lets me work independently without cutting me loose. I always have the opportunity to seek out his perspective on my ideas, methods, and results. Jay's guidance not only covers the mechanics of effectively conducting and reporting research, but emphasizes the importance of making research both applicable and communicable.

Jay is an excellent teacher in the field and creates learning opportunities out of all situations. Jay encourages constant questions and often responds with problems to contemplate. While he does not always have the answers, the quizzes teach the importance of constantly thinking, observing and questioning while in the field. Jay teaches by example and freely shares his tricks of the trade. Document everything. Take copious notes. Sketch ideas for figures in the field. Collect many samples. Think through the whole research process from data collection to lab work to publication. Anticipate.

An open exchange continues back at school. Jay encourages updates on the results I produce and the papers I dig up, and in return he often gives me a copy of papers he is sent to review. When we discuss data or papers, Jay patiently listens to my ideas before offering his own. He is not condescending if I say something wrong, but always corrects me and makes sure that I understand. When we do have different opinions his listens to my reasoning and is willing to change his mind, if convinced.

In his classes and advising, Jay pulls students into science by requiring us to engage it as seriously as he does. Jay's commitment to graduate students is part of his commitment to science. While his success as a scientist is apparent in his many publications and the great

esteem of his colleagues, the success of his graduate teaching is reflected in the respect of his students.

This award is an excellent opportunity to acknowledge Jay's important contribution to graduate teaching in the Department of Geosciences. However, regardless of this award, Jay will continue to conduct his science and to teach to his own high standards. He knows no other way.

Thank you for your time and consideration.

Sincerely,
Naomi Levin

[Letter from Jeff Pigati]

It is my pleasure to submit this letter of support for the nomination of Dr. Jay Quade of the Geosciences Department, University of Arizona for the Graduate Education Teaching and Mentoring Award. I have known Dr. Quade for about nine years, and have seen firsthand his commitment to teaching, research, and academic life as a whole during this time.

I came to Dr. Quade in early 1994 in a bit of desperation, as my then-graduate advisor suddenly left academics, leaving me without a thesis project or advisor and little time left to finish. I approached Jay and without hesitation he immediately set aside his schedule and talked with me at length about my options and several potential research projects. I quickly went from discontent with academic life to having the most amazing choices before me. Under his supervision, I completed my Master of Science degree within two years and was so impressed with his drive and passion for understanding geological (and many other) processes that I decided to return to school several years later to begin pursuit of a Ph.D. degree under his direction.

It has been in the last couple of years that I have been reminded of his excellence in the classroom. Dr. Quade's lectures are always well prepared and researched, and are delivered in a way to make difficult concepts easy to understand. Like many other professors, he teaches graduate classes at a very high level and ensures the latest research is included in the subject material. What sets Dr. Quade apart from many professors, however, is that he has included field and laboratory work as a further teaching tool in many of his classes. We as students learn most from "doing", and Dr. Quade seems to understand this to a greater degree than most. Although there is certainly more responsibility, work, and time associated with this, Dr. Quade will tirelessly teach both in the laboratory and on the outcrop to a degree that is above and beyond the call of duty. I know the majority of his students will agree that Jay's classes are among the finest being taught at this or any other university.

Dr. Quade is also very successful in publishing research and securing grants to support his graduate students. His research interests are truly interdisciplinary, and range from soil geochemistry and stable isotopes, to geochronology and Quaternary paleoclimate, to archaeology and dietary reconstruction, to just to name a few. He currently supervises graduate students in a variety of geological and archaeological sub-disciplines, and maintains a world-class research facility at the Desert Laboratory on Tumamoc Hill.

In summary, I enthusiastically support Dr. Jay Quade for the Graduate Education Teaching and Mentoring Award. Thank you for your consideration.

Sincerely,
Jeff Pigati