CIDER 2010 Summer program KITP - Participant evaluation form: tutorial and workshop program

Forms should be sent electronically to Kate Conner (kate@seismo.berkeley.edu). She will strip off your personal information so that your comments will be anonymous and we will combine them all and post them on the CIDER website.

Importantly, please remember to acknowledge CIDER 2010 in any publications, and presentations that in the future will have emerged from or been influenced by CIDER.

The NSF grant numbers to cite are:

NSF/EAR EAR 434151 for the CIDER program itself (participant support and organization)

And NSF PHY05-51164 for KITP who hosts us and provides the building infrastructure.

Because it is a significant investment of your time, it is also appropriate to cite your participation in CIDER in your CV.

Since CIDER is not a conventional framework but rather a long term investment, its benefits are more difficult to evaluate than a standard research grant. We need to make a special effort to gather information on its impact. This will also be of interest to future students of CIDER. Please remember to notify us of any concrete outcomes that might be even partially related to CIDER. A brief e-mail to barbara@seismo.berkeley.edu is enough.

Please provide your candid comments on the following – and any other - aspects of the program:

- 0 what is your level: graduate student, post-doc or faculty?
- 1 General organization/logistics
- 2 Location and venue, housing, food
- 3 Schedule
- 4 -Lecture content, level, pace, workload, balance between lectures and tutorials

- 5- Workshop format/organization
- 6 Please describe in a short paragraph how you view the benefits of participating in the CIDER 2010 program for your research and future career.
- 7- Other comments and suggestions for the future of CIDER

CIDER EVALUATION #1

Please provide your candid comments on the following – and any other - aspects of the program:

0 – what is your level: graduate student, post-doc or faculty? Graduate Student

1 - General organization/logistics

The program was well organized. All necessary information was readily accessible regarding logistics.

2 - Location and venue, housing, food

The location and venue were appropriate and comfortable for this type of program and the interaction necessary for group work and lectures. The housing was convenient, as was the meal plan.

3 - Schedule

Over the course of 3 weeks, there is a lot of information to process within this program. As a result, the schedule may seem a bit overwhelming at times for this reason only. However, I enjoyed every lecture, and it did seem that there was enough time to discuss topics with both lecturers and tutorial participants.

4 -Lecture content, level, pace, workload, balance between lectures and tutorials The lectures were terrific overall. Some were a bit more challenging than others due to differences in educational/research background, but all were interesting. The workload was appropriate. The tutorials did not seem to be as necessary. It was difficult to get all tutorial software running properly, which made the tutorials less efficient overall. I think that maybe some more time for research groups may be worthwhile in place of some of the tutorials.

5- Workshop format/organization

The workshop format was ideal overall, and well organized.

6 - Please describe in a short paragraph how you view the benefits of participating in the CIDER 2010 program for your research and future career.

CIDER 2010 was immensely helpful for me. I wasn't sure what I would get out of CIDER before coming to Santa Barbara. While here, though, I think I figured out exactly what direction I would like my future career to take in terms of research. I have a much better idea of how I would like to shape the remaining years of my post graduate education, and what I would like to study and develop during that time. I feel that CIDER has allowed me to focus my own personal research goals, while simultaneously broadening my interests within the geosciences.

7- Other comments and suggestions for the future of CIDER

I think CIDER is a terrific program, and I hope that it will continue within the future. I think a similar program should be formed for younger participants within geosciences. As an undergraduate, I had been torn between pursuing a career in research or industry. I decided to continue to graduate school, as research seemed more appealing, so that I could make a better decision after gaining some more extensive research experience. Nothing can compare to the CIDER program, however. This program is entirely different from the traditional graduate school experience for pre-candidacy graduate students. During my initial graduate student education, I remained unsure regarding my future plans. The format of CIDER was much more efficient in helping me towards a decision. This is mainly because I was finally able to pinpoint where my research interests lay (at least for the next few years). Now that I have a clearer focus on that topic, I feel prepared and excited to continue within the field. If I had attended a program similar to this earlier in my education, I feel that I would not have been as hesitant in planning my future career goals. I owe a big thank you to everyone who helped to make CIDER 2010 what it was.

Please provide your candid comments on the following – and any other - aspects of the program:

0 – what is your level: graduate student, post-doc or faculty? Graduate student

1 - General organization/logistics

The program was very well-organized – I thought there was a good balance between scheduled events and free time, and it was clear where we should be at any given moment. I appreciated the excellent email communication with Kate Lewis.

2 - Location and venue, housing, food

UCSB is a great location. KITP provides a pleasant, relaxing atmosphere and the facilities were good. I liked both the dorms and the food. It might be useful to note that the specific dorms we stayed in (particularly Camuesa dorm) had an excellent but poorly-designed two-story lounge. We spent a lot of the evenings socializing in this lounge, so it was great, but it was very noisy. The noise affected all three floors of the dorm, and I think some people had difficulty sleeping.

3 - Schedule

I thought the scheduling was great.

4 -Lecture content, level, pace, workload, balance between lectures and tutorials Most of the lectures were good. It was clear when the lecturer was concerned about accessibility/teaching the graduate students vs. only interested in discussing their work with others in the field. In the future, perhaps lecturers could be sternly warned to avoid the latter. I thought the mineral physics lectures were shining examples of good lectures.

In general, the lecture pace was good. I did not gain much from the tutorials – I'm not sure how useful it is to download a lot of software and only get a 30 minute taste of how to use it. It might be more useful for the tutorial leader to demonstrate their software in use on the screen – call on volunteers to come up and play around with it, or something like that.

5- Workshop format/organization

I thought the workshop was a great experience. Our group was successful in self-policing, self-organizing, etc.

6 - Please describe in a short paragraph how you view the benefits of participating in the CIDER 2010 program for your research and future career.

My participation in CIDER 2010 has helped me to broaden my comfort zone in earth science research. I previously had no background in seismology or mineral physics. The tutorials for mineral physics were excellent. I also gained a basic understanding of broad research areas in seismology (body waves vs. normal modes, forward modeling vs. stacks) through my small group work. I now feel comfortable downloading an article outside of my field and (hopefully) understanding the main arguments. Through the

poster sessions, I was able to discuss my work both with my peers and with senior members of the group. Feedback from that process is very valuable. I've also made a number of friends within my own field and outside of it. I look forward to working with them in the future.

7- Other comments and suggestions for the future of CIDER

Please provide your candid comments on the following – and any other - aspects of the program:

0 – what is your level: graduate student, post-doc or faculty? Faculty

1 - General organization/logistics

First informal two weeks involved just a very few senior participants that did not lead to collaborative work or much interaction with the physics of glasess participants. The remainder of the program was well organized and clearly will lead to some successful collaborations, proposals, and papers.

- 2 Location and venue, housing, food Very good.
- 3 Schedule See comments in 4 below.
- 4 -Lecture content, level, pace, workload, balance between lectures and tutorials Participants at all levels should be encouraged to be perhaps a little bit more independent, take time off from the formal tutorials and develop working interest groups earlier and independently from the formal tutorials, attending those only if they feel the content is critical to their interests. Formal tutorials should be broken up a little bit more and lecturers held to stricter time limits.

5- Workshop format/organization

Greater time in projects – either ess time or more flexibility in tutorial scheduling.

6 - Please describe in a short paragraph how you view the benefits of participating in the CIDER 2010 program for your research and future career.

CIDER is particularly valuable personally to me because I come from a small program in the geosciences and it gives me an opportunity to interact and form outside collaborations not as easily possible.

7- Other comments and suggestions for the future of CIDER

Participation can be enlarged and more inclusive. I don't think this is a problem with the organizers but rather a problem in perception. There is a heavy concentration of either UC for former UC, Berkeley students. Senior participants, who are non-tutorial lecturers, are not so obviously mentioned or seemed to be welcome in some of the earlier CIDER announcements. This can change with some outreach and promotion at perhaps AGU meetings or EOS announcements.

Please provide your candid comments on the following – and any other - aspects of the program:

0 – what is your level: graduate student, post-doc or faculty? PhD student

1 - General organization/logistics

- 2 Location and venue, housing, food Very good
- 3 Schedule Good
- 4 -Lecture content, level, pace, workload, balance between lectures and tutorials The tutorials were often devoted to solve some computational problem instead of the real scientific subject so I would suggest that the people in charge of a tutorial provide a working version of their tutorial for all kinds of computers (PC, Mac, Linux) before CIDER.
- 5- Workshop format/organization Good
- 6 Please describe in a short paragraph how you view the benefits of participating in the CIDER 2010 program for your research and future career.

The first benefit I for my research has been to meet a lot of researchers and be able to exchange with them about my topic. I also learn a lot of things in the other domains so that I will have a much open mind on my results. Concerning the future, first thanks to the projects I will be involved in one which will be a part of my PhD as well and second I met new people with whom future collaborations can be possible.

7- Other comments and suggestions for the future of CIDER

Please provide your candid comments on the following – and any other - aspects of the program:

0 – what is your level: graduate student, post-doc or faculty? Post-doc.

1 - General organization/logistics

Very good. Clear description of plans well before event as well as frequent communication in the run-up to the start. Help was also always at hand when you had a question.

A full postal (rather than a mailing PO Box) address for accommodation might be useful for foreign participants trying to enter the US.

2 - Location and venue, housing, food

Wonderful location. The housing was excellent though occasionally a bit noisy due to other summer camps with younger participants. The food was some of the best canteen food I've had.

3 - Schedule

Very well organized. Might have been nice to have more time for the tutorials to get their full value but I don't know what I'd have sacrificed in the program to allow this.

4 -Lecture content, level, pace, workload, balance between lectures and tutorials Lectures were generally set at a suitable level. I particularly enjoyed the talks that involved some blackboard activity rather than just slides. Occasionally too many slides meant that the pace was a little too fast. The balance between lectures and tutorials was good though I'd have appreciated more time to complete some of the tutorial work.

5- Workshop format/organization

This was the first long (>1 week) workshop I'd attended and found it to be an excellent format. The length of time allowed me to get to know more participants and discuss topics at a greater depth. It also allowed a broader range of topics to be discussed.

6 - Please describe in a short paragraph how you view the benefits of participating in the CIDER 2010 program for your research and future career.

While earth science was the topic of my undergraduate degree I've recently been more focused on numerical methods in my masters and PhD. Come 2011 I will be returning to work as a post-doc in earth sciences so CIDER offered me an excellent opportunity to revise topics I haven't come across in a number of years in preparation for this. It also brought me up to speed with more recent thinking on several topics than I was taught as an undergrad. Finally it gave me a fantastic opportunity to meet members of a broad research community (both my peers and the more senior academics) in a less formal and more relaxed setting than a standard conference. I believe all of these things will be hugely beneficial to me and my research.

7- Other comments and suggestions for the future of CIDER Many thanks!

Please provide your candid comments on the following – and any other - aspects of the program:

0 – what is your level: graduate student, post-doc or faculty? postdoc

1 - General organization/logistics great - all went smoothly;

2 - Location and venue, housing, food

location is impossible to beat: great campus, great climate, KITP is reasonably well equipped for CIDER purpose; student/postdoc housing was good (clean dorm rooms; small but private); next to cliffs and beach!; food was good - included healthy options; only negative is that our breakfast and dinner required a 15 min walk across campus when another dining hall was next door; as the CIDER group is relatively small compared w/ other groups on campus, we should have been allowed to eat the closer facility

3 - Schedule

the tutorial schedule was very busy and did not leave much time for spontaneous discussions; also, I would have liked a more Gordon conference style approach with a longer post-lunch break and more science (tutorials/posters) after dinner

4 -Lecture content, level, pace, workload, balance between lectures and tutorials Lectures: many lectures were good, but others fundamentally ignored the purpose of this meeting, "to educate a new generation of Earth scientists with breadth of competence across the disciplines contributing to understanding of the deep earth". The two most useless talk formats where (1) talks that blasted too much information at the audience and(2) talks that provided a useless level of information. To clarify from the onset: I was there to learn and don't mind a high level of difficulty. However, many speakers appeared to simply squeeze a quarter's worth of technical information into 90 minutes, leaving out time to explain why this is important, leaving out the big picture, and leaving behind most of the audience. Others blasted through too much material appearing to hope that there would be no in-depth questions and discussion to interrupt them.

My wish for future CIDERs would be to have speakers explicitly reminded that they should convey the basics, major concepts, breakthroughs and future directions of their discipline to "the next generation" of scientists. I would like to thank Michael Manga and Cin-Ty Lee for the outstanding lectures they have given. Some students have mentioned that they had fundamental questions they were

uncomfortable to ask during the lecture ("Can you please explain what a Fourier transform is without equations?"), which hindered them from following much of the

remainder.

Tutorials: I don't think that the tutorials helped much to increase the level of our understanding in other disciplines, or to prepare us to evaluate research performed and published in other fields. I also don't believe that anybody will use the programs introduced in the tutorials for their own research at a competitive level, without first learning more in-depth details of that discipline. Therefore I would recommend to either replace the current tutorials with advanced tutorials for people in their own discipline, or to run a series of tutorials with topics that students/postdocs can use later in their career. Suggestions include: how to structure and write a good scientific paper? how to prepare a grant proposal? how does the academic career track work? how do I use computers for scientific data analysis (properly, not with Excel); applied math (statistics or ODEs or PDEs or Fourier transforms or whatever students request during the summer program);

5- Workshop format/organization

It was very useful to utilize some time during the first 2 weeks to get people thinking about research topics. I think most topics are well worth being studied and I appreciate that there will be support available to get students back together to continue this work. Many senior participants worked hard with the students and dedicated significant time to the projects, ensuring that groups stayed focused and didn't repeat published work. (With one individual senior participant I would have liked to see more interest and guidance at the onset of the project to make sure the project got started well.) Each project seemed to have enough senior participants; however there was also one group of very senior professors without students, which seems to not help the overall goal of CIDER much.

6 - Please describe in a short paragraph how you view the benefits of participating in the CIDER 2010 program for your research and future career.

Listening to different views of our planet for two weeks has allowed me increase my level of understanding of what other disciplines are concerned with, paving the path to appreciating their work more than I would have without CIDER. I have also had the opportunity to interact with senior faculty in discussions at the poster session, breaks and lunches. There are two benefits I can see, to exchange ideas and, with a view on future employment, to become recognized in the international scientific community. My contact with other postdocs and students has led to one collaboration that will continue past CIDER (independent from the CIDER projects), and to the continuation of our CIDER project, which is on a direction in which I was planning to direct my own research program. Getting to know other students and postdocs quite well for the duration of CIDER will also prepare a basis for lasting respectful, professional interdisciplinary interactions between future colleagues.

- 7- Other comments and suggestions for the future of CIDER
- Please seriously consider changing the tutorial format (See above)
- Please negotiate with UCSB that folks who stay in dorms can eat breakfast/dinner in the dining hall next to the dorms, not half way across campus (with 20-30 people we are seriously only a small fraction of the 500 people or so who have breakfast/dinner at the closer dining hall).

Please provide your candid comments on the following – and any other - aspects of the program:

0 – what is your level: graduate student, post-doc or faculty? Graduate Student

1 - General organization/logistics

I found the organization to be stellar. The CIDER organizers, in particular Barbara and Kate, were extremely accommodating. When I asked to be housed in advance of the official beginning of the graduate student tutorial, they kindly put me up in the senior participant apartments for five nights. Barbara coordinated a nice dinner while I was in the apartments and made the effort to include me. Job well done!

2 - Location and venue, housing, food

Santa Barbara, CA is gorgeous! The location couldn't be much more inspiring, with views of the Pacific Ocean and the ability to eat lunches outdoors. The dorms were very nice, with enough privacy and well located to IV and Kavli. I also loved being near the lagoon for evening walks. The dining hall food was very impressive (much better than my undergraduate dining hall...). The fresh fruit (even expensive berries!) and the nice salad bar were highlights for me. Excellent location and venue, housing and food.

3 – Schedule

The schedule, while intense, was appropriate I thought. The hour and a half lunch breaks were much-needed mental breaks before the tutorials began. I also appreciated the scheduled dinners as a group twice a week. It really enabled the students and faculty to interact in a less formal way – one of the best parts of CIDER for me. I thought the schedule was well thought out.

4 -Lecture content, level, pace, workload, balance between lectures and tutorials In terms of lecture content, overall I was quite pleased. I did get frustrated at times because nearly all of the seismology lectures didn't seem at the right level to be accessible to a general audience. Given that the goal of CIDER is to encourage collaboration, even more emphasis should be placed on motivating the lecturers to give accessible, understandable talks. Also, it should be required for the lecturers to give a clear introduction to what it is they're about to speak about! Sometimes they launched into some detail and I had no idea what they were actually trying to solve or understand about the Earth.

With regard to the balance between lectures and tutorials, I thought the balance was good. I liked the two-lecture format in the morning, followed by a tutorial and research talks in the afternoon. With regard to the actual tutorials, I didn't find many of them that helpful. In the particular case where the tutorials require certain software to be functional, extra care should be made to either a) make sure the students can run the software on their computers or b) make sure that there are computers at Kavli that can run the software. The number of software glitches that made it tough to run the programs caused frustration during the tutorials.

5- Workshop format/organization

Well done, and thanks to ALL that made such great efforts to have CIDER run smoothly.

6 - Please describe in a short paragraph how you view the benefits of participating in the CIDER 2010 program for your research and future career.

For me, there were two concrete benefits of participating in CIDER. The first pertains to my knowledge base. I now know so much more about Mineral Physics, Geodynamics and some Seismology (!) that will be useful to me as I engage in scientific research. I valued the opportunity to learn from the experts, and in particular to learn from experts outside of my own institution. The second concrete benefit was making contacts with so many faculty and graduate students from around the world. Because of my CIDER experience, I now have an idea of whom I'd like to work with for a post-doc, and I would never have met and made such good connections with this person outside of CIDER. For this, I am truly grateful. In a sense, CIDER is a starting point for future fruitful collaborations.

7- Other comments and suggestions for the future of CIDER

Overall, the CIDER experience was wonderful. The place, the people and the science all combined for an engaging and rewarding three weeks. I only hope that CIDER can continue in the future so that other graduate students can have the amazing opportunity I just had. A sincere thank you to all of the planners!

Please provide your candid comments on the following - and any other - aspects of the program:

0 – what is your level: graduate student, post-doc or faculty? Faculty

1 - General organization/logistics

Beautiful organization. Smooth running.

2 - Location and venue, housing, food

Santa Barbara is great. KITP is great. Housing is perfect. Food good. Definitely appreciated the Santa Barbara Cafeteria lunches.

3 - Schedule

Schedule good—9am start time is humane. I'm thankful for no evening sessions (a la Gordon conference: I hate science sessions after dinner.)

4 -Lecture content, level, pace, workload, balance between lectures and tutorials

I don't think lectures the way we did them are the most effective way to have students learn. It's very difficult to stay focused for long format power-point lectures—especially ~3 in a day!! I would like to see CIDER adopt proven effective teaching methods—a short talk, break students into groups to work on a targeted project or homework-like assignment, reconvene after ~30 minutes for discussion. Unfortunately for the faculty (and students) many of us have no training in how to teach. Doing a better job teaching students will require a great deal more planning and thought on the part of the faculty. One way to bypass this is to scrap most of the lectures, and instead focus the effort around the workshops. Short, ad-hoc lectures from resident experts on subjects relevant to workshop can be requested by anyone. For example, I gave a short lecture on electrical conductivity measurements to the water-in-the-mantle group. 15 minute lecture, with some background and some lit review directly targeted to the problem at hand.

5- Workshop format/organization

I would like to see CIDER evolve towards more focus on workshop, less focus on lectures/tutorials. I see many ways to do this. Here are some.

- 1) start workshop groups right away—on the first or second day. That will bring students and faculty together quickly in small working groups. It will mix things up, fast.
- 2) find a way to mix around the groups. One possibility is to have separate morning and afternoon sets of workshops. That makes everyone a part of two separate, distinct groups. At the end of the first week, have a process that will cut the number of groups in half, and then redistribute people.
- 3) another way to mix the groups is to have one set of workshops week 1, a second, different set week 2, and then decide which workshop projects can/should go forward for a third week.

Also--Complete self-selection of participants into different groups made it a bit unbalanced this year (i.e. most of the min physics grad students were in the same group). Perhaps find a way to more evenly distribute the expertise?

- 6 Please describe in a short paragraph how you view the benefits of participating in the CIDER 2010 program for your research and future career.
- 1. I now have my eye on several young people whose professional development I'll be watching and helping if I can. Future colleagues in my department, I hope.
- 2. I have had broad-ranging, big picture discussions with colleagues. It's hard to quantify that type of discussion. I've also had detailed project-oriented discussions with colleagues. I'm hoping that these will translate to papers and proposals on a 1-2 year timeframe. Many of these discussions add depth to the papers and proposals that I am currently working on.
- 3. I met with some of the glass workshop participants also, and heard about some of their research. One of the glass workshop participants is interested in seismic slip and fracture! Definite overlaps there. I reconnected with another one of the workshop participants, who I knew before she moved to another institution. Out of that came reconnection, good discussion, and a promise to invite me to her department to give a talk.

7- Other comments and suggestions for the future of CIDER

I would like to see CIDER get bigger and expand its vision, and ultimately be the host of a KITP-like center. This will require broadening participation considerably, without giving up the core of basic science and interdisciplinary research. This will require a person with a vision (Barbara) who can resist tyranny of the majority.

Please provide your candid comments on the following – and any other - aspects of the program:

0 – what is your level: graduate student, post-doc or faculty? Graduate Student

1 - General organization/logistics

Well organized, with the exception of proper campus maps that actually had the names of the buildings that we were expected to arrive to (Kohn Hall). I could not find in any of the most informative emails that actually told us that the conference was in Kohn Hall, only that it was at KITP, which is not a building name.

2 - Location and venue, housing, food

UCSB was beautiful, La Guerra Dining Commons were fantastic!

3 - Schedule

Saturday lectures were unnecessary, excessive.

4 -Lecture content, level, pace, workload, balance between lectures and tutorials Many of the lectures were too specialized. Too many seismology talks. We felt that we were simply being talked at. There was little discussion. The presenters put too much information in their talks and they were so adamant about getting through it all that they couldn't slow down. There should have been much more interaction between the speaker and the students.

5- Workshop format/organization

The research groups should have been set up the first week. The students did not get to use their brains until the last week, after two weeks of too much information, sitting, partying, etc. We came alive the last week when we were given something to do. We could have cut the lectures down to one hour each and spent a couple hours every day working as a group. The tutorials were poorly organized. There should have been a central location where all of the tutorials should have run from, after making sure that they worked. Too much time was wasted getting our computers to work, even after Kate got all of our operating system information from us.

6 - Please describe in a short paragraph how you view the benefits of participating in the CIDER 2010 program for your research and future career.

Overall, CIDER was of tremendous benefit in terms of building relationships with members of the geophysics community. The professors were mostly wonderful, helpful, and eager to share their knowledge. The students were all terrific and positive. I enjoyed the experience and learned a lot, especially during the research groups. I just wished that we had more of that rather than mostly getting lectured to.

7- Other comments and suggestions for the future of CIDER

Do not separate the professors from the students. It became an emotional and geographic barrier that worked against the mission of CIDER.

Please provide your candid comments on the following – and any other - aspects of the program:

0 – what is your level: graduate student, post-doc or faculty? **Graduate Student**

- 2 Location and venue, housing, food

1 - General organization/logistics

It would have been nice have been able to eat at the dining hall closest to the grad housing; otherwise things were good.

3 - Schedule

The lecture schedule in the first two weeks was a little too dense.

4 -Lecture content, level, pace, workload, balance between lectures and tutorials The lectures were too long. I think most people found it difficult to retain anything after the hour mark. Having shorter lectures and actual discussion time would be more worthwhile then letting the lectures go through 40+ slides for an hour and a half.

Some of the tutorials were better than others. The list of software at the beginning wasn't really helpful to really be prepared to participate. More thorough instructions, especially what kind of machine you need, and not assume that everyone knows how to code.

5- Workshop format/organization

I think a good idea would be to have the first two or three days be more optional intro type classes to remind people of the principles and guiding equations for fields outside their own (sans powerpoint.. on the board). I think it would be beneficial to spend time on teaching people how to read a paper outside their field and notice the important aspects on what makes it a "good" or "bad" study and be able to look at the figures and understand what it is trying to communicate. Also by having these "intro" classes, it could save time in future lectures spent going over the same intro material on the first few slides if everyone is on the same page in the beginning.

6 - Please describe in a short paragraph how you view the benefits of participating in the CIDER 2010 program for your research and future career.

It was a good opportunity to network and meet other deep earth people.

7- Other comments and suggestions for the future of CIDER

Please provide your candid comments on the following – and any other - aspects of the program:

0 – what is your level: graduate student, post-doc or faculty? Graduate student

1 - General organization/logistics

Perfect!

2 - Location and venue, housing, food

Nice location. In the beginning I was worried about how it was spread out over campus, but the walks turned out to be a great time for interaction. The dinners that were organized for the whole group where very nice, and the food there was a nice change from the canteen.

3 - Schedule

Maybe a little bit more time for research.

The icebreaker overlapped with the dinner hours. Maybe the ice breaker could be after dinner.

- 4 -Lecture content, level, pace, workload, balance between lectures and tutorials Some lectures did not seem to aim for the broader public. I think lectures should aim on pointing out things in their field that are specifically interesting to other fields. Sometimes 1,5 hour is a little too much. The use of the blackboard was very good, and I would advise lectures to do it more. It makes it easier to stay awake. The preparation of tutorials could be a lot smoother, although I understood it was already better from previous years.
- 5- Workshop format/organization
- 6 Please describe in a short paragraph how you view the benefits of participating in the CIDER 2010 program for your research and future career.

CIDER made my view of the Earth a lot more complicated. It made me aware of the geochemistry. I think the largest benefit is to meet other students and faculty. Now I know who to contact with certain questions.

7- Other comments and suggestions for the future of CIDER Do one in Europe!

Please provide your candid comments on the following – and any other - aspects of the program:

0 – what is your level: graduate student, post-doc or faculty? Faculty

1 - General organization/logistics Very good

2 - Location and venue, housing, food Very good

3 - Schedule

Excellent except that the research part of the program was abbreviated.

- 4 -Lecture content, level, pace, workload, balance between lectures and tutorials Some of the lectures seem a bit advanced to me. I think it should be emphasized to the instructors that they are there to teach, not to impress.
- 5- Workshop format/organization Not enough research time.
- 6 Please describe in a short paragraph how you view the benefits of participating in the CIDER 2010 program for your research and future career.

I always learn something good at CIDER. I think it would be useful to start having the students evaluate the lectures/tutorials individually so that we have a better sense of what is working and what is not. I heard some grumbling about the level of some of the lectures.

7- Other comments and suggestions for the future of CIDER Longer post-lecture/tutorial research periods (3 weeks) with follow-up funding is required if we are going to make any real research progress.

Please provide your candid comments on the following – and any other - aspects of the program:

0 – what is your level: graduate student, post-doc or faculty? Post-doc

1 - General organization/logistics

The program was extremely well organized.

2 - Location and venue, housing, food

It is hard to imagine a more appropriate venue for CIDER than that provided by UCSB and the KITP. The Manzanita Village housing is ideal, offering proximity to both the beach and the KITP building where lectures are held. The dorms are very nicely maintained and have common rooms that are crucial for continuing collaborative activities – be they science-related or simple relaxation – in the evenings / weekends. The Santa Barbara area is a sufficiently attractive destination but – even more importantly – it offers few distractions. Because of this, student/faculty interaction is far more intense and meaningful than might be possible in a location close to a major city.

3 - Schedule

The timing of the program is reasonable and the 3 week duration offers sufficient time for actual learning / research to take place without being so long as to discourage participation (especially of mineral physicists and geochemists who often have laboratory commitments).

$\bf 4$ -Lecture content, level, pace, workload, balance between lectures and tutorials $N\!/\!A$

5- Workshop format/organization

No complaints.

6 - Please describe in a short paragraph how you view the benefits of participating in the CIDER 2010 program for your research and future career.

Clearly, CIDER provides students with an unparalleled opportunity to meet, interact with, learn from and work with an exceptional group of faculty, who are not only leaders in their respective fields, but also sufficiently committed to teaching to take 3 weeks away from their labs / university responsibilities and volunteer their time for CIDER. This is remarkable and unique in our community. However, CIDER also introduces the students to their peers – and future colleagues – from around the country and globe, forging connections among disciplines and institutions at a very early stage in the careers of these future researchers / professors. In this sense, CIDER allows its young participants to dispense with biases that might form from exposure to a single institution. In its scope and potential to transform young careers, CIDER is in my opinion without peer.

7- Other comments and suggestions for the future of CIDER

A remarkable aspect of this year's CIDER has been the friendly and inclusive atmosphere among the junior participants. Students engaged in group activities that had nearly universal participation. No cliques appeared to form and few if any conflicts arose.

Please provide your candid comments on the following – and any other - aspects of the program:

0 – what is your level: graduate student, post-doc or faculty? Faculty

1 - General organization/logistics

It was very well organized. I have received relevant information and instructions in advance.

2 - Location and venue, housing, food

The location is easily accessible. The venue is well suited for the summer program. Housing is convenient, although the condition could be improved.

3 - Schedule

The schedule is pretty tight. We had sessions on Saturdays and holiday (July the 5th).

4 -Lecture content, level, pace, workload, balance between lectures and tutorials Lectures covered a wide range of topics in multiple disciplines. The level is tailored towards advanced graduate students and postdocs, as intended. There is a good balance between lectures and tutorials. The workload is on the heavy side, but manageable.

5- Workshop format/organization

The format and organization of the workshop allowed extensive and in-depth interactions between participants at all levels. The workshop has provided unique opportunities to inspire and facilitate interdisciplinary research.

6 - Please describe in a short paragraph how you view the benefits of participating in the CIDER 2010 program for your research and future career.

Most of the lectures, tutorials, and research talks emphasized the role of volatiles in Earth processes. I have learned a great deal about our current knowledge and understanding of the volatile budget of the Earth, volatile contents in various reservoirs, the behavior of volatiles during subduction of slabs, and the nature and dynamics of volatiles in different The theme of the CIDER 2010 is "Water and volatiles in the Earth's mantle and core". portions of the Earth's core. Moreover, I have met leading researchers and many students studying volatiles in the Earth, and have established new connections for future collaborations.

7- Other comments and suggestions for the future of CIDER

In order to allow more students to benefit from CIDER, I suggest that we create a CIDER wiki, to disseminate the most fundamental knowledge relevant to the dynamics Earth through the internet. It would also be helpful to run an on-line tutorial series throughout the year, which introduces the basics of each discipline (mineral physics, seismology, geodynamics, geochemistry, etc) to both the participants of the summer program and interested students in general.

Please provide your candid comments on the following – and any other - aspects of the program:

0 – what is your level: graduate student, post-doc or faculty? Graduate Student

1 - General organization/logistics Excellent

2 - Location and venue, housing, food Excellent

3 - Schedule

Class schedule is good, but I felt dinner was too early in the eve hindering us from doing sports or extracurricular activities such as jogging or any other sports during the week.

4 -Lecture content, level, pace, workload, balance between lectures and tutorials The content was well planned. Lecturers introduced their respectively subjects carefully keeping in mind the different backgrounds of the audience. Tutorials were appropriate but software technical problems might have set us back using most of our energy to make programs work rather then working on the tutorial. I hoped that this would not happen as we were asked beforehand what type of machines we have. I think what should be done in the future is the use of a virtual machine. This means that CIDER would create a virtual machine with all the programs installed on it and a copy is distributed to participants. This would solve all the technical problems arising from variations of operating systems (MAC / Windows / Linux)

5- Workshop format/organization

The format of the workshop progresses well. The research groups appear too ambitious due to the short time (1 week) available. Perhaps one can consider asking students to form research groups as early as from the first week (allowing for individuals to change groups if they feel so). This can be a good opportunity for keen people to have more time to develop their tasks / goals.

Also, perhaps during application stage people can be asked if they are ready to dedicate time after CIDER – with the acknowledgement of their respective supervisors to follow-up projects.

6 - Please describe in a short paragraph how you view the benefits of participating in the CIDER 2010 program for your research and future career.

CIDER gave me an opportunity to show how science comes together. People from different backgrounds meet together to: learn, discuss problems, find solutions or explanations and develop an understanding. During CIDER, I came across various applications / techniques applied for geo-science. I had the opportunity to ask questions

about things I had never studied before such as geo-chemistry / petrology. This is very important in my studies as with seismology I can only explain physical properties.

During the research groups I chose techniques I never applied before.

CIDER has given me a wider selection on what to work on in the near future of my career and friendships which I look forward to develop in the future.

7- Other comments and suggestions for the future of CIDER I would like to thank the people behind CIDER for their dedication, patience and unlimited determination to educate others.

Please provide your candid comments on the following – and any other - aspects of the program:

0 – what is your level: graduate student, post-doc or faculty? Graduate student in seismology.

1 - General organization/logistics

Excellent. CIDER was in a perfect location organized by people who knew what they were doing © Thank you, Barbara and Kate!

2 - Location and venue, housing, food

Excellent. Hard to imagine a better location.

3 - Schedule

Excellent.

4 -Lecture content, level, pace, workload, balance between lectures and tutorials Very good. Provided a broad general education across different fields as well as specific cutting edge scientific points. I would improve the following: before going into the details of a lecture, include 2-3 slides of some basic background information for students

details of a lecture, include 2-3 slides of some basic background information for students who are not familiar with the filed. This would be very helpful for geochemists who need introduction to seismology and vice versa, for example.

Tutorials were quite useful to further understand the subjects. To improve: write down clear goals that should be achieved by the end of a tutorial. Some simply asked to "try something" without any student's feedback about the results. I think any student involvement would be welcomed by all the participants.

Also, there was some confusion about the computer requirements. Many couldn't install/run the tools because of missing software pieces. All the tools ran the best on Linux, I think for future CIDER meeting it could be helpful to mention the clear computer requirements to successfully run the programs.

5- Workshop format/organization

Excellent.

6 - Please describe in a short paragraph how you view the benefits of participating in the CIDER 2010 program for your research and future career.

I was exposed to a variety of fields and topics that normally got ignored for different reasons. I met current graduate students who will be my future colleagues in the geosciences field. I met dedicated professors who set high standards by their own example on how to teach a subject and solve research problems. I gained a valuable experience collaborating with students from different schools and fields while working on a research topic. I found a lot of new friends from many places around the world. All that and more was accomplished in a short three week period. I think it is hard to grasp all the benefits at the moment but I am sure I will be discovering them quite often in the future.

7- Other comments and suggestions for the future of CIDER

Along with the theoretical research projects, I would introduce designing/building analog models, if possible. Those models can be used to better explain a phenomena or simply for education purposes in a classroom. Although it might be difficult to finish such models because they require purchasing tools and supplies, the model sketches and theoretical explanations could be achieved.

Please provide your candid comments on the following – and any other - aspects of the program:

0 – what is your level: graduate student, post-doc or faculty? Graduate Student

1 - General organization/logistics

I thought that everything was very well organized. The use of Bspace to post announcements, forms, and content was great. Perhaps adding a 4th week to continue working on the research project would be beneficial. The effort to have students spend time interacting with senior participants was fantastic.

2 - Location and venue, housing, food

Really? Does that even need to be asked? KITP is an amazing facility. UC Santa Barbara is the most beautiful campus I have ever visited. Wow! The dorms were fantastic! 3 meals a day at the dining commons began to get a little mundane, but again it was convenient and paid for so it is hard to complain.

3 - Schedule

The schedule was a bit intense. It was hard to absorb some of the content after about a week and a half. I think that it might be more beneficial to spread it out over 4 weeks.

4 -Lecture content, level, pace, workload, balance between lectures and tutorials Much of the lectures did not focus on the theme of volatiles in the Earth, namely seismology. Also, the seismology lectures were very technical and assumed a background that many students did not have. I think that the tutorials were not very beneficial due to logistical issues. However, we have access to them through bspace and I could see myself using them in the future. I would prefer more tutorials and less research talks.

5- Workshop format/organization

I think that instead of poster sessions, it would be better to have the grad students give 20 minute talks throughout the duration of the conference.

6 - Please describe in a short paragraph how you view the benefits of participating in the CIDER 2010 program for your research and future career.

CIDER was an amazing experience. I come from a department that does not focus on Earth's interior. Through CIDER and was able to gain exposure to sub-disciplines such as seismology and geodynamics that I would not have had otherwise. I was able to make connections and generate friendships that will help with future job searches and collaborative projects. The research project was a fantastic idea and gave me a chance to really collaborate with other universities and fields for the first time. I will also be writing my PhD proposal based on what I took away from CIDER. CIDER is an amazing program and I hope that it continues.

7- Other comments and suggestions for the future of CIDER

Please provide your candid comments on the following – and any other - aspects of the program:

0 – what is your level: graduate student, post-doc or faculty? Faculty.

1 - General organization/logistics Excellent.

2 - Location and venue, housing, food Excellent.

3 - Schedule

Excellent. One suggestion is to revert to two weeks of research time (without talks tutorials). This will prolong the overall period of CIDER but will probably result in more publications from the various projects.

- 4 -Lecture content, level, pace, workload, balance between lectures and tutorials
 The quality has been excellent. See #3 for suggestions on balance.
 5- Workshop format/organization
 Excellent.
- 6 Please describe in a short paragraph how you view the benefits of participating in the CIDER 2010 program for your research and future career.

It was gratifying to see that many previous grads and postdocs are now faculty members. Meanwhile, a new group of students is taking their place. I have enjoyed working with the new students and will be watch how they develop in the next few years. Personally, a new research topic quickly crystallized during interactions with other faculty members.

7- Other comments and suggestions for the future of CIDER

In a previous message, I have suggested ways to tap into the new NSF initiative in Frontiers of Earth's Dynamic Systems and the service of consulting/lobbying firms such as Lewis-Burke in DC. Meanwhile, the next CIDER on orogeny, which is closely related to the EarthScope national initiative, could potentially lead to new ideas of supporting CIDER's future.