Guidelines and expectations for group members of the Earthquake Seismology Group

me/I refers to Marine.
GM refers to group members.
GS refers to graduate students.
US refers to undergraduate students.
PR refers to postdoc researchers.

Guidelines to apply to the PhD with Marine:
- Contact in the fall prior to submission.
- Submit a piece of code you wrote, or an explanation of the contributions you made to a larger code.
- Submit a short write up of what makes you passionate about earthquake sciences or seismology.
- Apply with some foundations in either seismology, earthquake science, geophysics, computer sciences (e.g. coursework and at least one research internship on broadly speaking geophysics).
- Scientific major in undergraduate/master is required. If the student comes in without the foundations above, the expectations are that the student will rely on the few coursework in the graduate program and on self-learning with textbooks.
- Provide a CV, research posters, internship reports, papers.
- Be self-motivated. PhD is a long journey and you will be the main driver.

Expectations for Year 1 of PhD (GS):
- It is highly recommended to start research the summer prior to the program start date to:
  1) review literature, 2) set up computing tools, 3) get familiar with the data, 4) transition to grad school. This can be avoided if the prospective student already did research in seismology somewhat related to the PhD research.
- Pursue in parallel both coursework and research. Coursework is chosen to complement the skills and/or bring breadth.
- Research is expected to move forward with a bi-annual presentation to the research group. Some literature review, some basic coding.
- If the research requires coding, the student is expected to write her/his own bit of core code with simple dataset to show that the main method is understood.
- GS can expect to reach out to me for technical and scientific discussion more frequently so that in later years.
- GS can expect to submit PhD fellowship applications to NSF (Fall of that year).
- Grades do not matter much to me, except for C+ and B- in easy quantitative classes where GS and I will discuss a plan of action to make sure these skills are learned.
Expectations for Year 2 of PhD (GS):
- Limited coursework
- Meet in October-November to brainstorm on the PhD story.
- Submit quals plan by December: this should be an outline of what you expect the PhD story and its chapters should be.
- The research project is expected to come to a draft of publication by quals time
- Summer post quals should be dedicated to the submission of the first paper. Paper should be submitted by the end of the summer

Expectations for Year 3-4 of PhD (GS):
- Work on second project
- Almost zero or very limited coursework
- Expected submission of paper #2 and #3 or made substantial progress toward both of them.
- Prepare annual meeting with committee members with a wrap up of Y1-3 and plan for the next year.
- Talk with me about CV, research statements, postdoc opportunities, postdoc fellowships.
- Have your website always up to date.
- GS expected to help teaching 2 times. Time commitment to teaching duties should not impact research more and students may not allocate more than one course load.

Expectations for Year 5 of PhD (GS):
- Expect to defend.
- Submit plan for dissertation by October-November to discuss with me
- Submit plan to finish up chapters/papers
- Defend!

Expectations on academic activities for everyone:
- A normal year is between 2-4 conferences or workshops (AGU/SSA/SCEC/EGU or other domestic national meetings like SEG + workshop/summer school) that I will cover fully. Contact group admin for reservation and booking to avoid spending upfront. I follow Federal and Harvard guidelines for spending.
- GS/PR are expected to attend every weekly department colloquium seminar.
- GS/PR/US are expected to attend every geophysical seminar
- GS/PR are expected to meet on one-on-one to every speaker that the group invites
- GS/PR/US are expected to attend the weekly group seminar and participate with at least one question per meeting and one presentation per semester.
- GS/PR Expect to be offered opportunities to write proposals or grant to support research. It is a voluntary policy, and I recommend at least one opportunity during the PhD and postdoc for the experience.
- If a recommended academic activity feels like too much work or a burden, the US/GS/PR is expected to communicate this in advance to me and we can easily cancel attendance.
- GS/US/PR and I are expected to practice at least one time the presentation in front of the group.

**Expectations for submitting a paper:**
- Use overleaf, with templates from journals or those available on the group dropbox, share with Marine as soon as a draft of an outline is made. [outlines can change depending on research progress]
- Submit figures with captions in overleaf, meet with Marine to discuss them and decide on the paper outline.
- All figures have to be made with minimal post-processing (e.g. Illustrator, Photoshop), and scripts that can reproduce each of them. The scripts have to be commented
- Submit all of the codes to your or the group Github (following the guidelines below).
- Write in the following order: 1) methods, 2) results, 3) introduction, 4) conclusion/discussions.
- GS/PR can expect Marine to be dedicated to the paper and iterate fast (turn around within 48 hours) if the research is complete.

**Co-authorship:**
- All co-authors have to contribute intellectually to the paper. No co-author will be added solely based on political reasons.
- I will cover all expenses for the paper
- First author is expected to: make the analysis (code), make the figures, write the first draft.
- I will be the last author if I only participate in the intellectual contribution and the editing.
- I will be the second or third author if I contribute with an algorithm/run/figure of my own.
- GS or US that start the project, make figures, and write the paper are expected to be first author. PR who mentor the GS/US are expected to be second author.

**Submission of codes:**
- Each code has to be commented, tested, and reviewed by one group member.
- Test each of the functions to verify that they work. Present simple tests in a notebook with bits of data.
- Codes have to be tested on 2 different machines, with instructions on how to install, run, and test.
- Submit to your github; the group github should have the repository forked.
- Your code should be hosted on your own Github or on the group Github and has to be open source. We do not patent codes but make them freely available.
- When the group member leaves, the code should remain available to other group members.

**Expectations on productivity, time management, vacation:**
- Your productivity is measured by the quality and submission timeline of the papers.
- Expect a PhD to be about 3 papers with flexible size and timeline.
- A normal year vacation is 2 weeks for winter holidays, 1 week around spring break, 2-3 weeks in the summer. It’s flexible of course, completely depends on productivity, and can be discussed with me.
- Summer internship or visiting scholar opportunities may come available. In the case the GS is interested, the GS and I will discuss the plan in relation to progress of the PhD dissertation.
- When classes are not in session and there are no holidays, I expect each group member to work on research full time.
- A full-time week is 5 days 35-40 hours a week.
- If you work remotely for at least two weeks, check in with me on a weekly basis via skype/zoom whatever.
- Outside activities (including outreach) are important to develop leadership skills. They are on a voluntary basis. If productivity goes down, GS/PR and I will discuss time management so that the activities do not impact research.

**Expectations on communication:**
- GS/US/PR can expect to hear back from me within 24 hours (including during travel time).
- I expect to meet once a week with each GS/US/PR for one hour.
- I expect the GS/US/PR to communicate with me if there is any logistical need, mentoring need, and on whether a (disclosed or undisclosed) life event will affect productivity.
- When my door is open, feel free to come in.
- I will respond to emails sporadically over the weekend, but do not expect to hear back until Monday.
- Off business hours conversations (phone/email/slack) are voluntary, based on my availability, and up to GS/US/PR to decide the frequency of such interaction.
- I like having shared slides on Google Docs to keep track of progress. For every meeting with US/GS/PR prepare a few slides with figures.
- Expect me to look at your code for mutual learning.
- I will be writing letters of recommendation for everyone. US/GS/PR have to communicate the date at which the letter is due, with at least a 2-weeks’ notice.

**PR expectations:**
- PR are expected to receive mentorship from me, which includes: proposal writing, scientific writing, mentoring opportunities for group members GSs and temporary US researchers.
- If the salary comes from a specific grant, I expect to do a substantial part of the proposal, and free to do whatever once this is accomplished.
- If the PR is funded out of a fellowship (their own or Marine’s), then there is more flexibility in topics
- I expect an average of 1 paper per year with PR as first author, with the knowledge that: i) building tools takes time, ii) data collection takes time. E.g. it can be 2 papers year 2, or, 1 paper year 1 and 1 paper year 2.
- I expect the first 6 months to be about learning new tools/skills/knowledge in the field. By 6 months, PR and I will sit and write a plan for the 1.5 year left for research (knowing that deviations from the plan are totally OK).
- PR can expect that I will be seeking out other opportunities for the PR, namely recommend them for seminars, write recommendation letters for job applications.
- I will cover expenses for the first conference after the appointment provided that I am co-author of your presentation.
- I will cover expenses for any publications that need funding after the appointment and where I am a co-author.

Expectations on computing resources:
- I cover all expenses for computing.
- We do not have 100% dedicated IT support, so be wary!