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### Analyzing team members through their use of Trello

For my final project, I chose to see how my house staff team, consisting of me and 7 undergraduates, could use Trello to improve our workflow and communication. Trello is a popular project management software tool, consisting of a board with separate lists, each containing cards (please see images at the end of this report for clarity). My initial proposal was to have the entire team use Trello for a single project and observe users' learning process. However, after preliminary discussions with team members, we felt that jumping right into Trello was not the best course of action: guaranteeing that everyone would use the tool would be too difficult. As a result, I decided to use Trello to elicit their ideas for improving workflow and perceived problems, and see how they felt Trello could best be used for our team's specific needs. This project became about needfinding by understanding how my teammates used the organizational blank slate presented by Trello. I will present my data on how team members used Trello, my findings on what users felt our team needed to improve on, and my conclusions on what our team's fundamental goal(s) are and how Trello could help achieve them.

There were two points of interest in my choosing this topic. First, I have recently become much more interested in the behavior of teams and what factors lead to effective group work. This is not a new research area: there is much work within the field of industrial psychology and a lot of money at stake for companies to maximize the effectiveness of their groups. Different individual personality types and work styles influence how teams cohere and operate, of course, but in practice each team has unique complexities and problems that need to be resolved. Recent research by Google's Aristotle Project suggested that teams with 'psychological safety,' where individuals feel that their positions will be heard and considered without feeling personally threatened when mistakes are made, are often the most successful.

Relatedly, there are countless productivity and to-do management applications, but none seem to be one-size-fits all for a similar reason. From my empirical observations and experiences of my peers working on various teams, I felt that an environment with real-time updates, visualization of information as a feedback loops, assigning particular areas to individuals, open communication, and a consistent platform for consolidating information were important to ideal functioning as a team. Additionally, I had recently starting using Trello as a personal to-do list manager with great success. I felt that it had all of these affordances, and was eager to try it as intended in a collaborative environment. I also hoped to see how other people would use the tool, and adapt their best practices into my own system. There is not much existing published work on why teams choose one project management tool over another, so I wanted to document the nature of one particular team, its needs, and how a particular tool might suit or not suit its operation.

For this project, I met with four team members for one session each. Each session consisted of a brief overview of the project and explanation of Trello's interface, about ten minutes of the user experimenting with the board and me observing their changes, followed by twenty minutes of discussion about: Trello's interface, how Trello could be used to better organize our workflow, and general thoughts on the aspects our team needed to improve upon.

To initialize the project, I set up the Trello board and added some basic elements that I thought would be useful. Initially, the board consisted of five lists: *Ideas*, *Projects in Progress*, *Completed*, *Responsibilities*, and *Self-Care Activities*. These lists are in three distinct conceptual categories with separate functions. The first category could be called “to-do management” and contains the *Ideas*, *Projects in Progress*, and *Completed* lists. This was the initial use-case for Trello for our team: keeping better track of what we are doing. The second category is team guidelines, including the *Responsibilities* list. Although each staff member has position-specific roles (e.g. financial manager, kitchen manager), there are other duties (e.g. setup of audio equipment for shows) that are non-position-specific but assigned to individuals: this list would formalize and display them. Finally, there was a list for *Self-Care Activities*, a theme that one team member had suggested we try and do more projects on.

The first participant, RW, had never used Trello before. She began by examining all of the lists and their contents (*Responsibilities* and *Self-Care Activities* were both empty). She noted about the list data structure, “I think they’re good [for organizing things by category].” Her first instinct was to move current to-dos for the week into *Responsibilities*, rather than leaving them in *Projects in Progress*. She interpreted these lists conceptually as *Responsibilities* containing particular action items and subcomponents of *Projects in Progress*, rather than my intended use of *Projects in Progress* as a catch-all for any thing (“project”) that is currently being done, a reminder of the importance of instructions in communicating how users should use an interface.

As the jobs manager of the house, her role centralizes the importance of accountability, and this came through in her approach to using Trello. She did not seem particularly interested by the idea of listing more general roles in the *Responsibilities* list. During our debrief following the usability session, she described that what she perceived as Trello’s most likely use case would be as a consistent place to write things down, and also to assign to-do tasks to particular individuals (replacing the weekly email that we send out and taking advantage of Trello’s real-time capabilities and assignment feature). I believe that her focus on this use case of task completion rather than coordinating complex projects reflects the goals and operators of her assigned role as jobs manager. The jobs in the house include cooking, washing dishes, cleaning the house and bathrooms, and brewing beer, which are simple and discrete tasks assigned to individuals. Thus, in her regular role she does not need to enable communication between members. Overall, besides some interface quirks (you can add a small color bar to cards to organize them by color, but this feature would be more useful if you could color the entire card; clearer comment features; clicking a card hides the rest of the board) she was optimistic about Trello’s potential to increase our task completion rate through shared information and explicit accountability features. However, she did mention that the design of the comment feature as hidden and intermixed with seemingly irrelevant information like when the card was moved to a different list felt like it limited the possibility of using Trello as a site for conversation and discussion of projects.

The second participant, AW, had previously used Trello when working in a psychology lab to gather data from experiment participants. Although she did not remember the exact workflow, she recalled having weekly tasks to process certain participants, assigning tasks to individuals, and presenting a pipeline for the work of data gathering, image tagging and labeling, and so on. She spoke positively of her experience with Trello, and came into the session with

the intention of using Trello rather than exploring whether it might work for her/our team. When looking at our board, she began by adding tasks to the "task management" lists, adding projects she had thought of and moving completed ones to *Done*. She then saw the empty *Self-Care Activities* list, and seemed to recognize she had the additional operator of adding-a-list. After this, she spoke out loud (we had an informal talk-aloud protocol in place) and mentioned that she wanted to make a list of values/topics by which to organize our activities. She then created a list titled *Sports* and began moving items around from the other columns to it. After about a minute, she then said: "Hmm...There are sports activities, but there isn't any clear importance to this." She then renamed the category to *Promote Health* and added other activity cards into this category. (I refrained from mentioning that this list could probably be subsumed under the existing *Self-Care Activities* and let her continue). She also added a list for *Fostering Discussion*, which was a new category including the book club and Thursday dinner discussions we had recently started. After finishing the usability component of Trello, she talked primarily about her goals for using a tool like Trello. As the RA (essentially, being in charge of the emotional health of the house's residents), she felt like her primary goal was to think about the community and its health. Rather than being concerned with individual accountability to tasks, she felt it was more important for our team as a whole to be accountable to our ideal values for the community. More specifically, she mentioned, she thought that the initial goals we had laid out at the beginning of the year had been forgotten about, and that meetings with our team focused too much on "just getting it done" over the bigger picture. This thus framed her approach to Trello, where she saw how the tool could link to her real goal of accountability to values by having lists for each category, and cards for completed/current projects in those areas. Seeing a list with fewer cards than the others would provide visual feedback that we needed to put more energy into those areas, and seeing these lists regularly would remind us of their importance. After the session, she texted me and said we could comment on cards, thanking team-mates for their hard work and encouraging them.

The third participant, JF, is a personal user of Trello in addition to having used it at a start-up for work. He was enthusiastic about using the software to organize our team's projects more effectively. As a personal tool, he used it to collect thoughts and webpage links for a start-up idea of his; at work, he used Trello to run weekly sprints as part of a Kanban system. Although he had support for the tool, he made few additions to the board and no structural changes (list rearrangements or additions). For most of his usability session, he stared at the screen and scrolled back and forth between cards. Noticeably, he started laughing during the trial and explained he had added a joke card to the *To-Do* list. This highlighted one dimension, humor, that is essential to team functioning but hadn't been considered thus far. During our discussion, he also mentioned that the tool might be useful for kitchen budgeting, a problem that JF and I were working on as the respective kitchen and financial managers, but he didn't have any concrete suggestions on how to use the software for this.

This usability session with JF brought forth an additional (problematic) team goal: the goal of improvement without any specific or actionable points to improve upon. While JF reiterated support for the mission of this project and the tool proposed to achieve it, he did not have any suggestions or proposed subgoals that our team should work towards through Trello or another tool. This, from another lens, could have been predicted beforehand: JF is known on the team to be the least reliable and laziest member. In the book Principles by Ray Dalio, Dalio

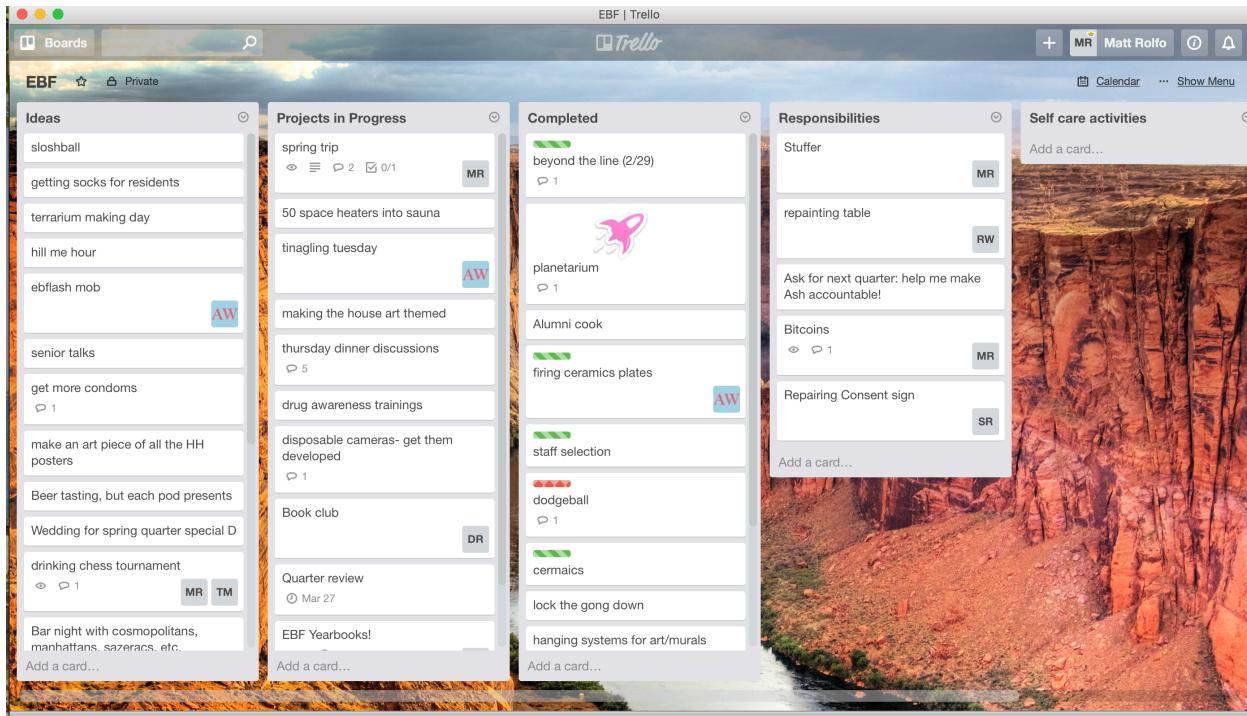
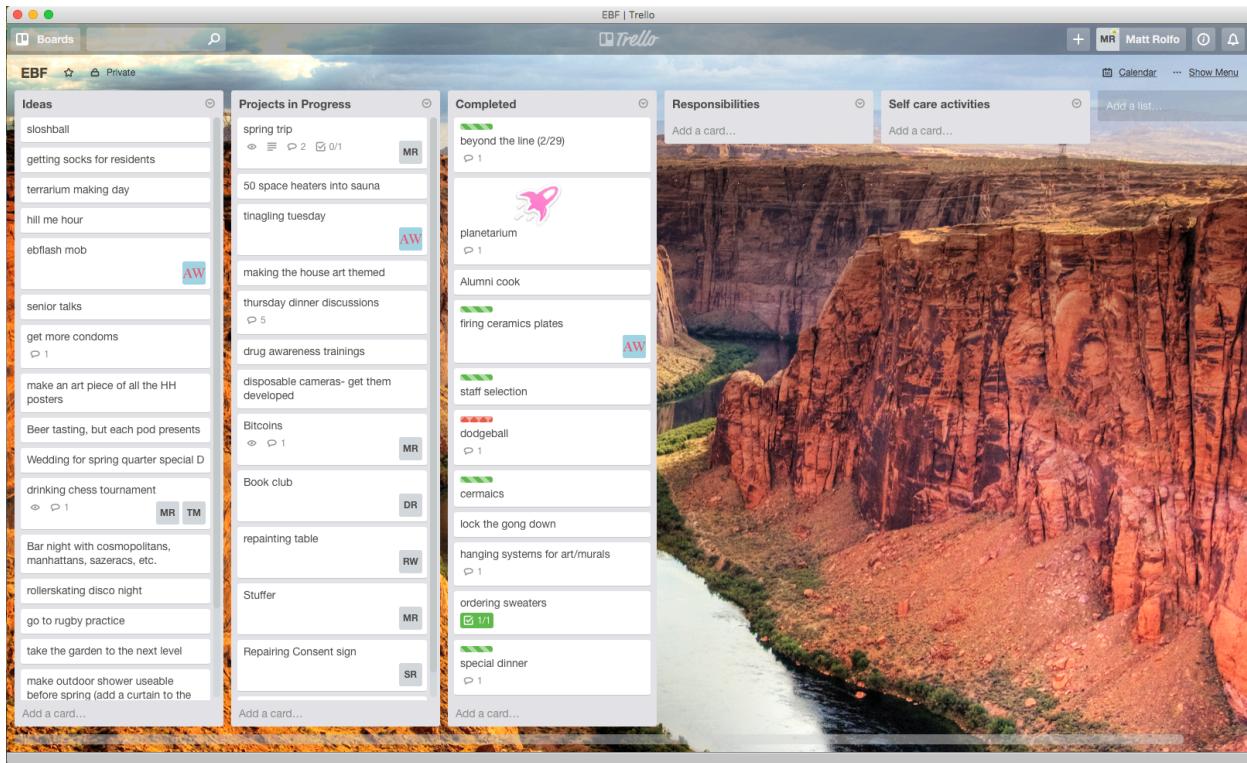
(a successful manager and CEO of Bridgewater Capital) separates two concepts: the system and the people. Basically, Dalio argues that you should first create a system describing roles and workflow, and after creating this system find the right people for these roles. When a problem arises, you have to decide whether it was caused by the system or the people. JF reminded me that one other important meta-factor in evaluating Trello's future effectiveness was whether the people were to blame.

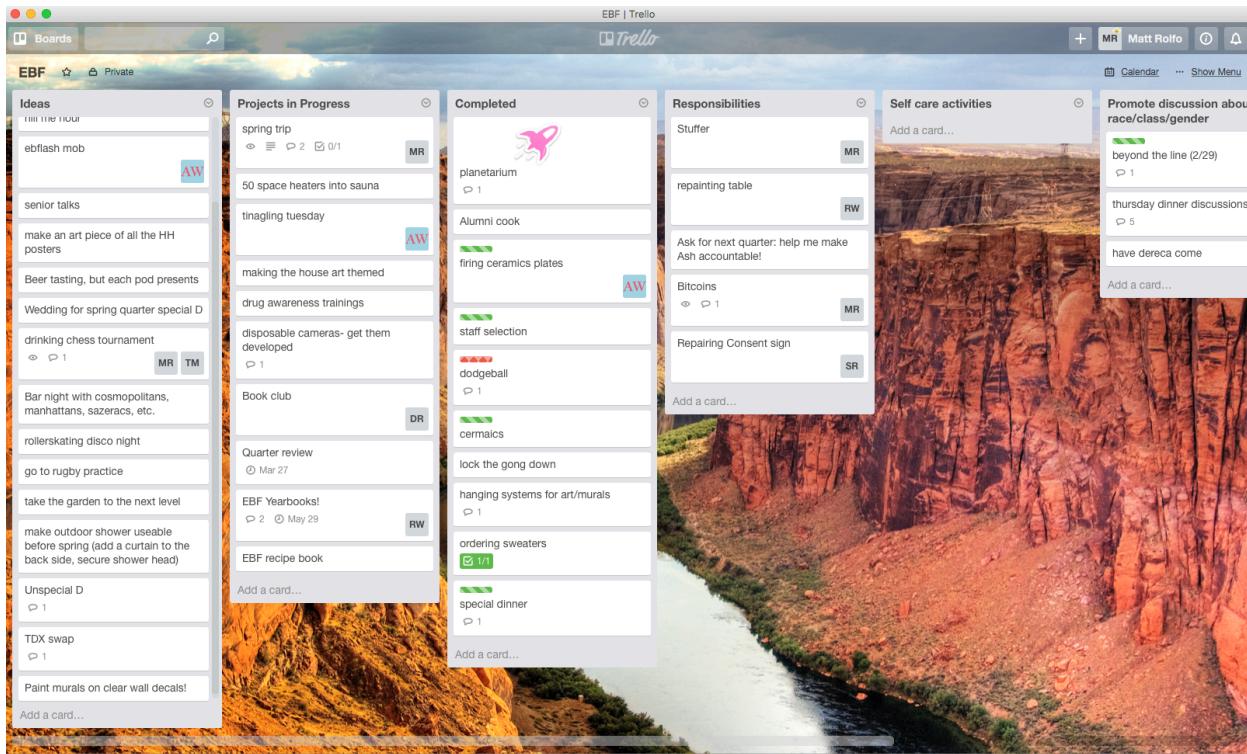
The fourth participant, SR, also brought these concerns to the table. SR had never used Trello before, and admitted that she had never been a fan of digital organizational/productivity tools besides the bare minimum of email and calendar. For the first couple minutes of our usability session, she looked at the existing cards and lists and added several to the *To-Do*, as well as the *Self-Care Activities*. However, I could tell that she was not very enthusiastic about Trello, and waited until I asked if she wanted to discuss her thoughts about our team and how Trello could help. She took advantage of another operator, quitting, that no one else yet had. In our lengthy conversation following the usability study (which did not yield many results here), she stated that the biggest problem for our team, in her mind, was that half the team did not take initiative. When projects or tasks came up, these four members generally did not step up and say they would complete them. Instead, they would wait until being told what to do. Additionally, she said "After losing trust in someone to do things when you ask, it becomes easier to just do it yourself instead of asking and asking." Furthermore, she said that her prescription for a solution was that some people "explicitly be need to told how to do more. I [and two other staff members] don't need an app to tell us that we're doing the most work." She felt that the people doing the most of the work don't need the tool, but said she was hopeful that a visual display of this inequality could motivate the lesser contributors to do more. She balanced this by saying that emotional labor cannot be quantified: a tally box wouldn't reflect this additional work done. The underlying problems and conceived goals of staff for SR are, to use Dalio's language, with the people rather than the system: providing an improved system like Trello is equivalent to putting the cart in front of the horse. Her proposed principle of "If there's something that isn't clear who should do, you should do it" is a good one for approaching this issue.

Altogether, the usability analyses and followup discussions yielded a trove of insights and potential followups. To summarize briefly, RW saw promise in using the tool to increase accountability through visual displays of information and assigning roles. While Trello's features weren't perfectly suited to her working style and didn't enable dialogue, it would be great as a place to consolidate all of our information and list action items, to be reviewed daily rather than weekly as with our current format. AW liked the tool as a place to write to-dos and support one another, but saw it as potentially linking to her higher aims of our staff and house and holding our team, rather than individuals, accountable. She proposed having lists of themes, and adding cards to each of these lists to make sure we are "hitting all of our bases." JF, emphasized humor and the importance of having fun in addition to work. He also reminded me that not everyone is an active participant or instigator of change. SR felt that Trello was a layer over the real problems, which did not have to do with the system. Instead, she felt like clearer personal communication and initiative would help remedy the problems. However, she did say that Trello could potentially help and would be willing to aid.

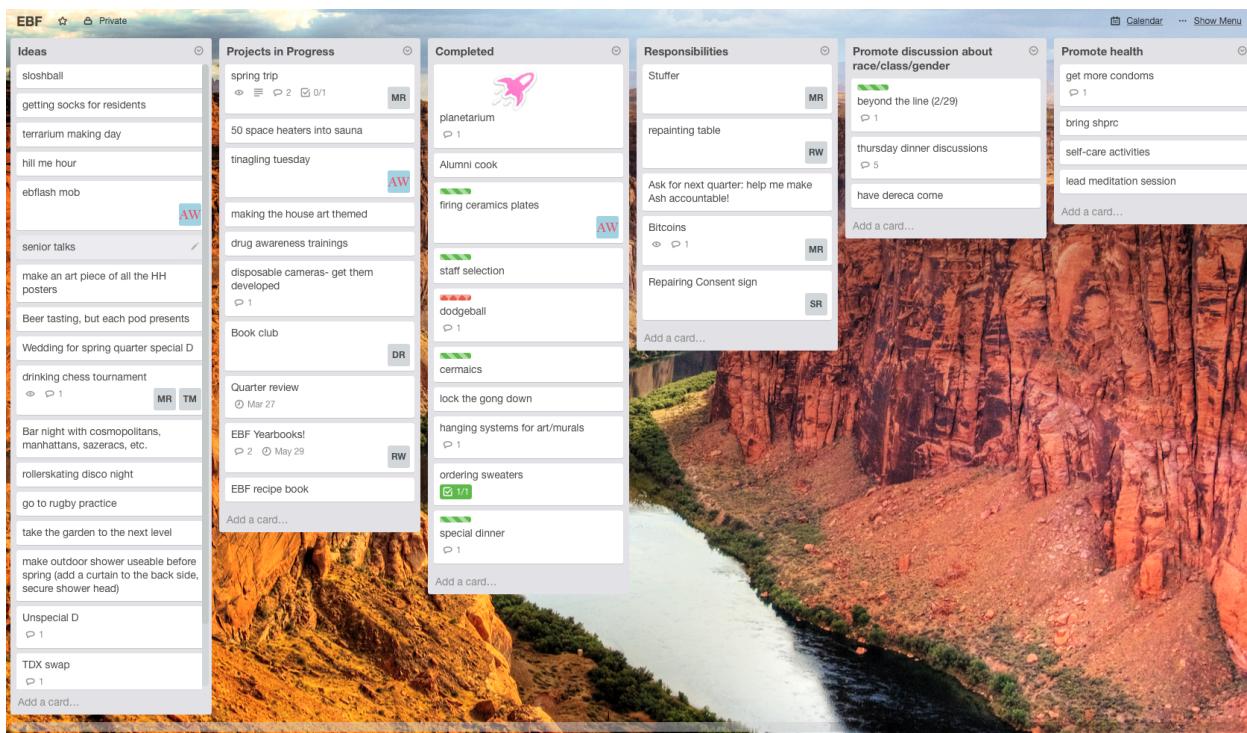
What surprised me the most was the sheer amount of philosophy and visions for our house that the project revealed. I had expected primarily for observations about Trello and its affordances, and how the *interface* supported or didn't support users. I did get a lot of this, though: I saw the limitation of Trello as a conversational tool, simply because of how they chose to display comments. The limited choice of color labels also limited their usefulness, when a clearer option would be to color the whole card. Additionally, multiple boards, for the management of streams of disparate to-dos, revealed the potential for developing and nurturing our philosophy and hierarchy of value systems. However, most of the nuggets from this project were about that philosophy and hierarchy. I learned how different each team members' goals were for our team and house, and the type of place we hope to create. Some values here were accountability, initiative, care, thinking about team, thinking about community, and fun.

As for next steps, there are several that seem clear. I think meeting with the remaining team members for one-on-one sessions will reveal further insights about Trello and views on our team. The feedback from SR should be addressed first, as I agree that diving into a new system without a discussion of renewing initiative and purpose would be naive. There are two levels; getting people emotionally invested in a project, and then actually carrying out the project. We are, in some ways, more troubled by the first one. However, the clearest use-case for me is for Trello as listing all random ideas in one consolidated location (Trello) in a column, keeping our to-do list and assigned items in another column with assignments to individuals, a display by name of who had completed particularly important tasks/projects and seeing who has contributed to which, and also creating a *separate board* with our important themes and projects to achieve them. In addition, I think it would be most useful to have a single admin responsible for the board (me); looking at the potential attrition rates, if no one was directly responsible for the board it would likely be doomed to the landfill of unused technology. However, at this moment I'm optimistic at the potential of Trello to improve the work we do as a team.

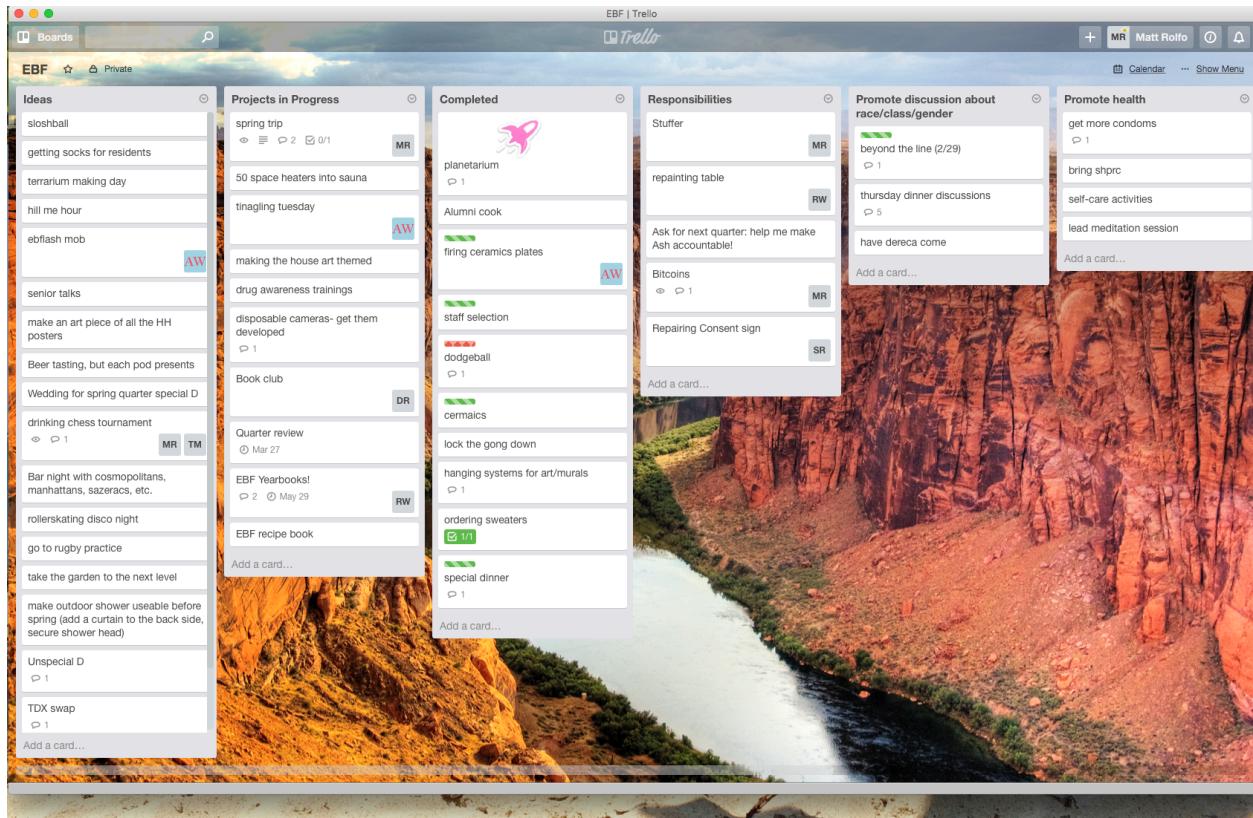




This shows the board after AW made changes.



This shows the board after JF made changes.



This shows the board after SR made changes.