How to conduct a:
Solo Math Intensive

In the spring of 2011, I took a leave of absence in order to focus on my research. Over 11 weeks I averaged 38 hours/week - and even did 80 hours one week. It was a wonderful, and wonderfully productive time. I recommend it to everyone. Here is a How To guide, with some advice for undertaking your own SMI. (This advice applies to any sort of Solo Research Intensive, or a more general Solo Work Intensive.)

Logistics of leaving:

Most departments will grant a leave of absence without asking too many questions; someone once told me that they can't deny you if you quote "personal reasons." You'll need to have enough money to support yourself, and someone who'll take care of your cats and chickens. Figure out precisely when your SMI will start and stop.

Where to go:

It helps to go somewhere else. This removes you from your usual distractions. You want to choose somewhere with few distractions, but with sufficient infrastructure to support your work. Fortunately, there are many places in the world like this, and many countries where the cost of living is probably less than you're used to.

I aimed for a monklike lifestyle of simplicity and clarity. So I chose the beach in Thailand; specifically Tonsai on the Krabi peninsula. It is only accessible by boat. One-room-plus-bath beach bungalows cost $6/night, and meals are about $6/day. The round-trip flight to Bangkok was about $1000 - so in theory a three month SMI would cost about $2200.

By walking to the next beach, I could get wireless internet (from the beach!). Wireless internet is becoming more and more common. To figure out if a country is likely to have wifi where you want it, I suggest looking on the Lonely Planet's Thorn Tree Forum (http://www.lonelyplanet.com/thorntree/) - a great resource for shoestring travelers.

Anticipate your needs:

Food, lodging, internet - are there any other needs to be met? For about $250, you can buy a small, light netbook, that will allow you to browse the web, typeset anything, and of course read PDFs. Note that, if your work requires strong computing power, these netbooks will disappoint. However, Google and Amazon now allow services where you can farm out computation tasks to their servers in the cloud, for very small cost. I'm told that now there's a bit of a learning curve for this service, but I'm sure that soon it will be very easy to do.

Most basic needs - pens, paper, sunscreen, bug spray, toothpaste, etc - will be available locally, unless you really head into the wilderness. An SMI in the wilderness takes a little more planning, but all this advice still applies.

Video-chatting:

This is helpful if you are collaborating, or need to meet regularly with your PhD advisor. There are many free or cheap online meeting rooms. I used vyew.com - it allows you to upload PDFs, images, and other files to a common meeting room. In realtime, you can chat (with text, voice, and video options) with one or more other people. Everyone can mark comments, draw things, and users can see each others' cursors (which is very helpful for "pointing" while discussing). Everything is uploaded to the website, so all you need is to email the web link to participants, who access everything through a browser (i.e. no software to download). It's free.

Literature:

Most likely you'll want access to journal articles and books. Many of these can of course be downloaded, but I recommend putting everything you expect you'll need (and then some) on your netbook beforehand. This saves time with sometimes-unreliable internet connections. As for books, I spent a significant amount of time sitting in front of a scanner before I left. Think of it like a bachelor/bachelorette party, before your SMI.

Before you start the SMI:

I strongly recommend priming yourself with a long TO DO list. Making and living with TO DO lists is an art. One fun way to get a good list: try to write down, in five minutes, one hundred things that you want to do in the next three years. Then look at your list and sort them into short-, medium-, and long-term goals. Avoid setting up expectations for your SMI - look at your wishlist gently and with some patience.

Starting the SMI:

Two words: jump in. Try to jolt yourself out of your normal mode of operation, to discover new modes. Aim high - if you normally do 10 hours of research a week, aim for 20 or 30 in the first week. Give yourself a pleasant range of tasks each day, from your TO DO list, and be flexible. You want to push yourself out of your comfort zone (that's the "intensive" part) - but do it in a somewhat sustainable way.

Keeping it going:

Come up with new modes. Be flexible, and change often. Find new things that work, and refine them.

SELF-REFLECTION IS KEY. Keep a journal - or better, keep several journals: a research journal (what are you doing?), a meta-research journal (how are you doing it?), and a personal journal. These don't have to be in separate places, but it's helpful to notate them differently so you can look back quickly. In my experience, thorough documentation is crucial for keeping track of good/bad ideas, what you've done, what you're going to do. The occasional summary or table of contents is helpful.

REST IS KEY. An SMI is a chance to engage your subject in a more complete, holistic way. You want to be open to non-rational modes of thinking - intuition, metaphor, etc - and these are usually encouraged by sufficient sleep and mental refreshment. I found that a meditation practice deepened the experience and increased my productivity significantly.

ACCOUNTABILITY HELPS. During my SMI, every week I would update a Google spreadsheet with my hours of math, meditation, and yoga; I had a friend at home who did the same with different activities. This detached communication and record helped to hold us accountable for our weekly goals.

Stop it:

Unless you're trying to go crazy, it's important to conclude the SMI in a healthy way. Allow yourself some transition time, to reflect on the experience and readjust your priorities.

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