NGRI Phage Course, Fall Semester, at Washington University in St. Louis: A Phantastic Phirst Experience
Kathleen A. Weston Hafer, Christopher D. Shaffer, and Sarah C.R. Elgin
Department of Biology, Washington University, St. Louis, MO 63130

What We Did
At Washington University (WU), we had 18 students in the fall semester. They were paired by the instructor according to biology background and schedule. Each pair isolated, purified and characterized a putative novel mycobacteriophage by the middle of November.

When We Did It
Our class met 5 hours a week on Tuesday and Thursday afternoons. During phage purification, students were expected to work briefly on Wednesdays and Fridays.

How it Worked
Students were surveyed at the end of the semester.

Selected Student Survey Comments:
- I think the time commitment for the class was great. It was enough to make sure people were dedicated, but not too much to turn us away from research.
- I thought the time commitments were very reasonable, and the way partners were paired based on their schedules worked out really well.
- I liked having a partner, and the fact that we didn’t pick our own. Coming in as a freshman, I didn’t know anyone in the class.
- I like having partners as we can discuss problems and share ideas.
- I really like how the readings all coalesced by the end of the semester to give us a broad background of the importance of phages and how our work in the lab fits into the broader picture.
- This was a terrific class! The only thing I regret is not getting to do more experiments like observing plaque morphology over time, testing temperate phages, calculating burst size, or trying to find the phage receptor.
- I have very much enjoyed this semester and am eager for the next… I’m sure it will be a “BLAST”. Sorry for the pun.

Lessons Learned:
- Pairing partners by schedule worked well. With one exception the groups worked well together, and contributed equally to the work.
- We need to take better quality plaque photos, and be more organized in storing and sharing photos.
- Working more than two days a week is necessary to get DNA ready for the JGI deadline.
- The DNA isolation protocol needs to be improved. We felt we lost a lot of yield.
- Students need more in-class time to work on notebooks, or notebooks need to be allowed out of the lab.
- We need to give better instructions for what is expected on writing assignments.
- Always have a back-up M. smeg culture ready!

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Plaques of BEEST (above) And J-Gladiator (below)

The day we isolated high-titer lysate (known as “the holy grail” at WUSTL)

EM work (left), and results: Buckbeak (above) and Uncle Howie (below)

First time gel loading (left and center), and J-Gladiator gel (right)