**2017 Biology Summer Program Summary**

Background

2016 saw the inaugural Biology summer program for high school students which was developed and led by Katie Spink, with participation by several other faculty. We accepted 20 into the program, about 14 said they would attend, and 2 did not show up or complete the week. It is my understanding that IIT did discount the fee for some of these students. The program was successful and was under budget; however, no excess revenue was returned to the department, rather it reverted to IIT.

Last fall, the department decided to take over management of enrollment so that all funds for the program would come to the department and any excess funds that were not spent directly for the program would not be lost to other entities. In addition, an issue of time pressure was identified last year, with difficulty offering all experiments within a tight 1-week timeframe. In addition, many students expressed a desire for more time in the program. To address these issues, we expanded the program from 5 days over one week, to 8 days over two weeks (while keeping tuition flat). Once again several faculty agreed to participate.

2017 Program

The department took over enrollment management. We had 23 students deposit; however only 21 arrived for the program. This represents a significant increase in enrollment. Many of the students (8) were from Von Steuben High School; and, we had one student from out of state. 10 students expressed interest in the health professions.

The two week program consisted of a series of experiments (genomic profiling and bioinformatics, microbiology, anatomy and physiology, and cell biology (new this year)) and guest speakers in different career paths that someone with a degree in Biology might take (research, MD, advocacy). Each day ran from approximately 10-3. We also coordinated an ‘ICO day’ where ICO faculty came to lead the eyeball dissection in the morning and the students spent the afternoon at ICO learning about Optometry. Organization involved arrangement for speakers and planning the experiments (ordering, safety approval, etc), and generation of a ‘lab manual’. Katie ran and organized the program and a daily basis, with one TA, and with Nick (2 exps, 4 days), JF (1 exp, 1 day), and John Zhou (3 exps, 1 day) participating as well.

This program was also the first lab class in the department (possibly at IIT) to fully comply with required safety review mandates. We developed appropriate protocols, and applied for and received IBC approval before any instruction could begin. This process was a bit cumbersome and challenging, with several iterations and revisions required, and tight deadlines. However, it is expected that re-approval in subsequent years will be less difficult; and this has provided a useful template for the regular IIT lab class approval process.

Budget

Expenses included salary (TA), lab supplies, and two provided lunches. We were far under budget and were able to use the residual funds to purchase equipment for the teaching labs. Micro-incinerators were purchased to replace the use of Bunsen burners, which is an issue of safety and regulatory compliance – and shows how this program can be used to help the department and institution deal with these and other “unfunded mandate” issues. We are still waiting for the sequencing charges; however, as you can see, we still have residual funds, even after the equipment purchase, that can be used.

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| --- | --- | --- | --- | --- | --- | --- |
| Saline (concentrated) | 37.87 |  |  | 11,500 | 23 students x $500 |  |
| Carolina (various-media/blood) | 753.68 |  |  | -1000 | Withdraws |  |
| tellurite plates | 283.84 |  |  | -8894.7 | Expenditures |  |
| GelRed | 110 |  |  | 1,605 |  |  |
| Lipofectamine | 392 |  |  |  |  |  |
| Loops/Needles | 178.28 |  |  |  |  |  |
| Tongue Depressors | 19.56 |  |  |  |  |  |
| Zymo Kit | 99.42 | genomic |  |  |  |  |
| Saline (Carolina) | 19.65 |  |  |  |  |  |
| Electrodes | 114 |  |  |  |  |  |
| Pay for Krystal | 1200 |  |  |  |  |  |
| Lab Notebooks | 656.5 |  |  |  |  |  |
| Razor Blades | 25.8 |  |  |  |  |  |
| Sequencing |  |  |  |  |  |  |
| NM supplies... | 360 |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Pizza Lunch | 147.25 |  |  |  |  |  |
| Lunch | 147.25 |  |  |  |  |  |
| microincinerators | 4349.6 |  |  |  |  |  |
|  | 8894.7 |  |  |  |  |  |

Student Response

The students were very pleased with the experience, especially learning about career paths they had not considered before i.e. policy, optometry. Parent feedback was also positive.

For the Future

Naturally, some days progressed better than others, but that is to be expected. Furthermore, we experienced some growing pains this year with the increase in enrollment. Two issues were identified this year to deal better deal with these higher enrollment classes:

1. we will need to extend the hours to 9-3 and
2. we need add an additional TA, with an ratio of 1 TA/10 students suitable to properly manage these naïve students.