Can the program foster some degree of consistency to mentoring?

The IRIS internship program is developing a 13-item rubric measuring research skills, and a protocol of training and intern-mentor meetings to discuss progress. The goal of the intervention is to both increase the extent to which the mentoring relationship is centered on the intern, and to examine interns and mentors to feel more effective monitoring interns’ personal/professional growth. This intervention was piloted in 2013 and 2014 refined and fully implemented in 2013 and 2014.

A survey of the participants (28 mentors and interns) was conducted to assess perceptions of the intervention: Neither intern (18%) nor mentors (14%) looked forward to completing intervention protocol. However, interns perceived more value in the intervention than the mentors did. For example:

- 50% of interns, versus 36% of mentors agreed or strongly agreed that the mentoring rubric was a beneficial resource for the mentoring process.
- 64% of interns, versus 36% of mentors agreed or strongly agreed that the mentoring meetings, to discuss the rubric with my mentor were beneficial for the mentoring process.
- 70% of interns, versus 30% of mentors agreed or strongly agreed that the mentoring rubric helped illuminate areas that needed improvement and areas where growth occurred.

A rubric was developed in 2013 and refined and fully implemented in 2014.

The rubric helped illuminate areas that needed improvement and areas where growth occurred. This intervention was piloted in 2011 and 2012 refined and fully implemented in 2013.

The IRIS internshi program is developing a 13-item rubric measuring research skills, and a protocol of training and intern-mentor meetings to discuss progress. The goal of the intervention is to both increase the extent to which the mentoring relationship is centered on the intern, and to examine interns and mentors to feel more effective monitoring interns’ personal/professional growth. This intervention was piloted in 2013 and 2014 refined and fully implemented in 2013 and 2014.

Figure 4. Rubric completion: first, second and third phases of the protocol. The high lighted boxes indicate the prescribed protocol for each phase of the intervention. 90% of intern/mentor pairs adhered to the initial protocol to completing the rubric independently. The third phase, only 37% of intern/mentor pairs adhered to the protocol by each completing the rubric independently and then meeting to discuss. It is unclear why they didn’t believe the protocol was necessary in the third phase but it could be that they are uncomfortable with it, they didn’t understand the instructions, or other methods were more effective.

Discussion

- Cost per recruited intern is roughly $2500 per intern.
- Minority students apply to RESESS (an minority focused internship program) at a rate of at least 50%.
- Minority students apply to RESESS (a minority focused internship program) at a rate of 50%.
- While this approach provided a larger sample, it also introduced several weaknesses.
- For example, the data below may underestimate the number of alumni currently in the workforce.
- 20 alumni who did not respond to the 2014 survey were identified.
- 20 alumni who did not respond to the 2014 survey were identified.
- 20 alumni who did not respond to the 2014 survey were identified.
- Men remained in the geosciences at a higher rate (81%) than women (71%). However, even men and women who received an advanced degree remained in the geosciences at a relatively equal rate, 83% and 81%.
- 50% of students who did not go to graduate school transition away from geosciences.

Figure 5. Intern perception of mentoring effectiveness versus rubric completion. The number of times the rubric was completed by the intern/mentor pairs did not have a significant effect on the interns’ perception of the mentoring they received at the p<0.05 level for the three conditions [F(2, 29) = 1.75, p = 0.20].

Table 3. Applications and intern recruited to the IRIS and RESESS Internship Programs

<table>
<thead>
<tr>
<th>Year</th>
<th>2012</th>
<th>2011</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interns</td>
<td>75</td>
<td>50</td>
<td>25</td>
</tr>
</tbody>
</table>

Table 2. Perceived influence of the internship program on interns sorted by advanced degree and employment sector.

<table>
<thead>
<tr>
<th>Degree</th>
<th>Professional</th>
<th>Academic</th>
<th>Employment Sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced</td>
<td>60%</td>
<td>40%</td>
<td>60%</td>
</tr>
<tr>
<td>Undergraduate</td>
<td>40%</td>
<td>60%</td>
<td>40%</td>
</tr>
</tbody>
</table>

Figure 1. Gender (left) and race/ethnicity (right) of survey respondents.

Figure 2. Alumni career paths post IRIS internship. From 1998 to 2013 the IRIS Undergraduate Internship Program facilitated opportunities for 144 undergraduates. Solid lines indicate pathways, dashed lines indicate pathways that did not persist past the 2014 data set. Each line represents the story of an individual.

Figure 3. Alumni career paths post IRIS internship sorted by gender.

- Women departed the academic pipeline for the workforce, post bachelors degree, at a slightly higher rate (83%) than men (71%). However, even men and women who received an advanced degree remained in the geosciences at a relatively equal rate, 83% and 81%.
- 50% of students who did not go to graduate school transition away from geosciences.

Discussion

- A frequent criticism of REUs is that the majority of participants are already set on their career paths before they participate. We certainly find this, as 85% of our interns enter considering an advanced degree.
- A frequent criticism of REUs is that the majority of participants are already set on their career paths before they participate. We certainly find this, as 85% of our interns enter considering an advanced degree.
- 83% of alumni are employed in a geoscience career or are actively pursuing an advanced geoscience degree.
- 75% of alumni are employed in a geoscience career. The majority of these alumni are split between careers in the energy sector (53%) and employment in academia and federal and state governments (44%).
- 50% of students who did not go to graduate school transition away from geosciences.