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Examining the Influence of Internships on Teacher Recruitment

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Abstract

The Columbus Regional Academy of Future Teachers of STEM (CRAFT-STEM) is a Robert Noyce Teacher Scholarship program funded by the National Science Foundation (grant #1136356). The program provides summer internships for university freshmen and sophomores, and possibly to rising university freshmen who have participated in Columbus State’s STEM Honors Camp, with the goal of interesting them in teaching. Interns work on assigned projects for a total of 400 hours over the summer and receive a $4500 stipend.

The grant also supports a faculty mentor to work with each intern. Intern assignments are tailored to the backgrounds and interests of the individual interns, with input from the faculty mentor and a focus on enabling interns to visualize themselves teaching STEM subjects to high school students. Projects have incorporated working in summer camps, peer tutoring, designing and testing instructional labs and support materials, developing lab activities for middle-school-aged home school students, creating science exhibits, developing a Kids Zone at the Coca Cola Space Science Center, conducting discipline-based research, and conducting education related research. The purposes of this investigation are to investigate whether the internship is significantly influencing recruitment of high school STEM teachers, and whether adjustments can be made to boost the impact of the program.

Related Literature

To address the need for more highly qualified K-12 teachers in STEM fields in the United States, the National Science Foundation’s Robert Noyce Teacher Scholarship program provides scholarships of at least $10,000 per year for academically high performing university juniors and seniors who commit to complete STEM degrees with secondary certification and teach in high-need school districts. The program also supports summer internships involving formal and informal teaching experiences meant to recruit more STEM teachers. Available literature illustrates what a challenge recruitment can be. Only about 12-15% of learning assistants who have participated in the Colorado Learning Assistant Program have been recruited into teaching careers (Colorado Learning Assistant Program, 2015; Gray and Otero, 2009). Tomanek and Cummings (2000) found that only 3/15 of science majors committed to science teaching after a 100-hour classroom teaching assistant project. In a study of a 3-year, 34-student internship program Worsham et al (2014) conclude “internships were not effective in recruiting the interns into the secondary science teaching education program”, although five left the program planning to teach, only one student switched from exploratory status to a commitment to science teaching, while one other decided to switch out of science teaching.

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STEM Teaching Certification for Undergraduates at Columbus State

Students pursue secondary teaching certification in STEM fields at the undergraduate level at Columbus State University through the UTeach Columbus program, a replication of the UTeach program started at the University of Texas, Austin. The UTeach model incorporates two field based teacher recruitment courses – UTCH 1201 and UTCH 1202 – for which students’ in-state tuition and fees are rebated after successful completion of course requirements.

CRAFT-STEM Internship Data

Since 2012, our program has supported 22 summer internships – 6 in 2012, 7 in 2013, 9 in 2014. We have continued to monitor these students throughout their studies at Columbus State. Four students have taken at least one UTCH course since completing the internship (all 4 had declared majors in secondary education prior to their internships). Seven had taken UTCH 1201 before starting the internship.

In 2013 we began surveying interns after they had completed the program to evaluate the influence of the program. Survey items include 5-point Likert scale responses to the following:

- Please rate your interest in teaching prior to the summer internship.
- Overall, how has the summer internship influenced your interest in teaching?

Interns were asked to rate the influence of specific elements of their internship on their interest in teaching (very encouraging, somewhat encouraging, neutral, somewhat discouraging, very discouraging). 12/14 indicated they were more interested or at least much more interested in teaching after the internship (but this does not appear to have translated into action in most cases). All 14 attributed mentorship of small research groups at a STEM Honors Camp for high school students as somewhat encouraging or very encouraging of their interest in teaching.

In 2014, we adapted the survey to include some items posed by Liu et al (2010):

- The money (pay) was the primary reason that I decided to pursue this internship.
- I am aware of what is required to become certified as a K-12 STEM teacher.
- My family is concerned about my becoming a teacher.
- I have concerns about becoming a teacher.

Five of 8 respondents in 2014 said they have concerns about becoming a teacher. Of the 2 summer 2014 interns who were much more interested in teaching after the program, both disagreed with the statement that money was their primary reason for pursuing the internship. In 2014 we also added an intern seminar featuring speakers from high need schools. Six of 8 respondents attributed conversations with these speakers as somewhat encouraging or very encouraging to consider teaching.

Conclusions

We need to be much more intentional about whom we select for internships, looking for signs that teaching is at least a career consideration for them. It appears that we should seek to maintain opportunities for interns to mentor research projects and use intern seminars to inform interns about the rewards of a teaching career.