

<b>Commentary from the First Section of the April 21, 2006 Virtual Conference</b>
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**Recruitment***Program Setting*

- How are programs recruiting, particularly with respect to different groups of possible teachers? What works best for different groups?
  - There is not much evaluation/research regarding recruitment. What have others found regarding finding and recruiting people from different pathways to come into these post-bac programs?
  - Evaluation at the level of how, who, and what recruitment methods work best for different pools of individuals is important.
- What type of evaluation is currently taking place that would determine the extent to which the availability of Noyce fellowship or stipends impacted people's decisions to become teachers?
- What are the differences within the program for the 1-year/2-year funded groups, for middle school and high school teachers? Are differences in where/how they are trained similar across schools?
- Are there differences (in who is recruited, and how long they are retained) between schools with varying costs? E.g., \$10,000 finances a much smaller proportion of tuition at most private schools than at many public institutions.
  - Need to gather data on how central the funding was in awardees' decisions to go to various universities.

*School/District Setting*

- A very positive relationship with the recruiting department representative for the local school district streamlines the process and minimizes interview/application anxiety for Noyce students of one project. This relationship is important for getting students interested in urban teaching.

**Retention***School/District Setting*

- What does retention mean?
- Is impact (which of course needs to be defined too) a better measure than retention? If so how can a program create impact?
  - The public school people in middle grade math or science challenge simplistic notions of retention as every type of situation comes up.
    - 1) We can think of retention as staying in a certain classroom, school, or site and locating around teacher. Yet, thinking about the relationship between retention and impact, focusing not only on the classroom but the school as whole, may be useful. Perhaps impact is a more valuable focus with retention as a subset.
    - 2) What program features of the 3-year program that we offer, seem to be most significant in helping teachers to have an impact and retain them? This is vital as we have most control over the program features that we, in conjunction with the schools, implement.
- Are Noyce Scholars more likely to stay in teaching? Are they more likely to take on teacher-leader roles on their campuses or in their districts?
- What sorts of methods are used to track teachers once in the classroom?
- What is the role of testing in teacher retention?
  - One key factor shaping teachers continuation is the kind of testing required in state schools in which graduates are employed.
  - Testing cuts into time for teaching.
  - One experienced teacher's view is that: new teachers are typically overwhelmed by curricular issues and testing may affect veteran teachers more than new teachers

- Also must consider that tests probably vary by grade level (e.g., in Texas with science first tested at grade 5 and not again until high school).
- Suggest that looking at the testing demands of the Noyce Scholar schools would be an important variable in examining the retention of the many grads the program will produce. E.g. New York State has extensive testing demands at some grade levels, but not at others. We have a wide sample to use in the comparison.
- How are we evaluating whether the requirement of teaching in high needs LEAs impacts retention of early career teachers?
- How can we better detail (and include in analyses) the characteristics of the schools/districts in which Noyce students are teaching (beyond the broad framing by Noyce)?
- How do the differences between the following affect later outcomes:
  - a) Funding of one- vs. two-years
    - Noyce supports two different types of programs (undergrad and post-bac). These are two very different groups of people. It would be important to examine whether there is a difference in outcomes associated with these two types of programs.
    - One site expressed greater difficulty with undergraduate versus graduate student retention.
    - How well do the Noyce post-bac teachers bring their real life STEM experiences to the classroom?
  - b) Middle school and high school teachers
    - How does location of pre-service training (i.e., in discipline or colleges of education) impact level of content, student outcomes, etc?
      - When middle school teachers are in colleges of education (even with substantial coursework in discipline areas), they are not eligible for participation in Noyce. How does this affect the Noyce sample?

### **Training-Practice Alignment**

*Immediately Upon Entering Teaching* (mentioned as a key moment by several people)

- How does a teacher's preparation match (or not match) his/her new setting?
  - What do the new teachers expect? How well do their expectations match reality?
  - How can programs and the evaluation examine the differences between school/district expectations for teachers and preparation program expectations of what science teaching should look like?
    - Those entering teaching from other professions are often disillusioned by the educational environment and classroom.
    - To what degree is there a match or mismatch between the universities and the schools in regards to supporting new teachers?
  - We are concerned about lack of retention due to lack of support by the school districts. Perhaps one way to acculturate schools and teacher preparation institutes is for NSF to set some common elements of successful in-service and pre-service programs.
  - Regarding the mismatch, this may not be a new problem and it may not be resolved by Noyce. This shouldn't detract from institutions supporting teachers in doing the right thing in schools regardless of school/district support or lack of it.
- It would be a shame to infer that the Noyce program is not effective when really the mismatch between pre-service training and district/school expectations is creating the problem. Gathering data to examine the training-practice alignment would be useful for the program evaluation.
- Recommend studying the mentoring processes once students enter the classrooms.

## **Sustainability**

### *University Setting*

- What will a sustained program look like? How will institutional commitment to teacher recruitment be sustained? Will there be on-going institutional support to retain PSTs (Pre-service teachers) in the teacher prep programs, and continuing into the novice years?
- Possibility of transforming aspects of the university-based culture (a commitment to providing teachers, changing attitudes of faculty, new ways of recruiting on campus)
  - My own hope is that many universities will transform their internal operations so that preparation of excellent teachers in large numbers becomes a core activity. I hope that all the conferences are trying to lead to such an end. I would view the Noyce programs as unsuccessful if the scholarship monies provided the main motivation to STEM majors to become teachers, and the flow of teachers vanished at the end of funding.
- Provide means to ensure students have the financial freedom to:
  - a) fund their own education in order to choose their own career paths (often have conflicts with parents who are funding their college education)
  - b) afford the additional credits required for teacher certification
    - How can these needs be met without the Noyce Program or in what ways can the Noyce program's three year existence contribute to lessening these needs (e.g., by changing culture of the university, influencing administrators to contribute scholarships, etc.)?

## **Definitional Concerns/Consistency Across Projects**

### *Distinction Between High-Need Schools and High-Need LEAs*

- An example of the differentiation between high-need schools and high-need LEAs: one could be in an area and have a school within a particular area that is itself not high-need, even though the area is high-need.
- The Noyce RFP and legal documents refer to "high-need LEA's" (not "high-need schools"). All the Noyce graduates I know are very aware of the difference, and many of them have taken advantage of it.
- The LEA point is an issue; graduates know they can teach in a certain district without high-need schools. We definitely need to support grads; we run a math science institute to provide support beyond legislated induction.

### *Common Definitions for Information Provided on Projects*

- We need common definitions for concepts involving Retention, Post Bacc certification, and Middle School.

### *Consistency Across Instruments Used in Evaluations*

- In our evaluations there are perhaps too many instruments designed to measure the same or similar things. Many of these instruments are still in the design phase. The best case scenario would be having a small suite of instruments that all could [would] use.
  - In what ways can the evaluation team assist Noyce sites in:
    - Selecting the "best" instrument for the purpose,
    - Capitalizing on the fact that there are numerous sites interested in similar things toward validation studies of these instruments (using Noyce sites as the test-bed for validation studies),
    - Merging efforts for the development of instruments that are currently in the planning phase?

## Type of Evidence

- The evaluation needs to provide information useful to decision-makers such as, a provost.
  - I could not find clear plans for gathering information in the presentation that would sway decision makers I have met.
  - My model of a decision maker is a university provost. The provosts I know like simple numbers that are easy to understand, and that stand up to inspection.
    - They like answers to questions such as "how many new teachers do we have in the past three years because of projects supported by Noyce grants?"
    - Simple graphs and plots can be very effective.
    - Gathering information that is too complex or hard to gather well (such as K-12 student performance data) can even be counter-productive.

## Communication

### *Community of Noyce Teachers*

- Could the Noyce program create/maintain a national community of early career teachers who have received Noyce fellowships?
  - Experienced classroom teacher (30 years) also involved in teacher preparation noted that being able to maintain a community among Noyce fellows either locally or on a broader scale could have powerful outcomes, another connection for these students could be a very valuable feature..

### *Noyce Projects*

- Request to share email addresses

## Conceptualization

### *Noyce Logic Model*

- With respect to the work done at the decision points discussed, once students enter the classroom a whole host of new decisions affect them beyond the description of the Noyce vision (univ support, student views of teaching, and professor (especially content) views of teaching). It may be better to evaluate these rather than student performance (as many aspects control student performance).

## Long-Term Studies:

- Suggest that NSF take a longer term look at:
  - Whether Noyce teachers become teacher leaders
  - Whether Noyce Scholars are effective in mentoring their students to enter undergraduate programs in science, mathematics, technology, and engineering?
- Need a long term commitment for training, mentoring, and following Noyce students.

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## Suggestions from Projects

- At a most basic level, it is important to leave the conference with *what aspects need to be clear and coordinated across programs* and *what areas can be personally individualized* in its operation
- Need to focus on what we can do (these are all good issues). Good results from these three years based on good questions that we've designed together will put us in a good position to request continued funds.
- An important issue is how we can mentor students to be successful in high-need schools. Part of it is following them, but the budget for that is small.

- Three different things:
  - 1) Look at the different types of schools that are producing these types of teachers (R1, liberal arts, size of school);
  - 2) Recruitment and a connection with faculty perspective not just in education but in discipline areas with perspective on teaching and teachers;
  - 3) Examine what SOEs are doing to mentor or teach students for high-need schools not just high-need LEAs.
- Come up with 3-4 topics to discuss and email to projects. The suggestions of folks about evaluation and research would be great to hear at the PI meeting (first challenge is to narrow the focus from the myriad suggestions received so far - each will lend itself to a different approach).
  - Potential areas to address: recruitment, mentoring, topics for investigation (comparative pieces to investigate together)
    - What are issues and how do you solve them? Introduce a topic; introduce a question; help them to ask more questions; help them to reflect on solutions (small group) and then reflect in a large group.
      - Small groups would be helpful because projects have such different views
    - Projects have some common concerns and issues such as retention and recruitment and the content of the program-these should be some of the topics
  - Topic of long-term mentoring?

### **Evaluators Should/Could:**

- Develop PI conference plans and share via email (come with potential questions and design ideas)
- Take suggestions about foci for different small group discussions on which groups will report back. Need to clarify how to characterize the factors that are key to evaluation of the Noyce Program.
- Develop affinity groups interested in similar topics and coordinate online times for each group (e.g., 10 people) to discuss the topic.
- At PI Conference, make plans for future conferences and ways to keep in communication.

### **Anticipated Attendance:**

- PIs and Noyce students
- Estimate is  $\frac{3}{4}$  PI + student,  $\frac{1}{4}$  without student