

Research Brief No. 4

What Characteristics Are Found Among Institutions Still Offering and No Longer Offering Reformed Undergraduate Science Courses?

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The *National Study of Education in Undergraduate Science* (NSEUS), funded by the National Science Foundation, investigated characteristics of reformed and non-reformed undergraduate science courses in a population of 103 higher education institutions. These institutions, and one or more of their courses were involved in the NASA/NOVA Program. The NOVA courses were developed and offered at various times beginning in 1996 in a large professional development effort to create reforms in higher education undergraduate, and mostly entry-level, science courses.

At many institutions, the reformed courses influenced other courses at the institution, as instructional practices were changed. An initial survey in 2006-2007 determined the status of the courses originally funded by a sub-grant. A total of 185 reform courses continue to be offered at 72 institutions (70%) in the population (see Table 1). The NOVA reform course is no longer offered at 31 (30%) of the institutions after the 11 year time period during which the NOVA program has been in existence with 39 such courses or 21% of the total originally funded having lapsed.

Table 1
Institutions Offering Reform Courses Created under the NASA/NOVA Program

	Institutions	Number of Reform Courses	Institutions Offering NOVA-Like Courses <u>not</u> Developed Under NOVA Program but Influenced by NOVA Campus Activity (Number of Courses)
Reform courses still offered	72	146	41 (104)
Reform courses no longer offered	31	39	8 (14)
Total	103	185	49 (118)

In addition to the reform courses created as a result of the NOVA professional development program, additional courses (n = 118) were created at institutions as a direct result of the impact made by the original reform process on campus. Such courses had not received NASA/NOVA sub-grants. These have been referred to as NOVA-like courses (or NOVA course clones) with some developed in the same science department and others in other science departments (see Figure 1). NOVA-like courses represent an impact 64% greater than the original 185 courses developed in the professional development program over an 11 year time period. Forty nine institutions developed at least one NOVA-like course. Many developed more than one of these courses (see Table 1).

Further discussion of NSEUS findings is available in:

- Sunal, D. & Sunal, C. (2008). What levels of institutions in a national population are reforming undergraduate science courses? *Research Brief No. 1*. Tuscaloosa, AL: The Office of Research on Teaching in the Disciplines. <http://nseus.org> and <http://www.teachingdisciplines.ua.edu>
- Sunal, C., Sunal, D., Sundberg, C., Mason, C., & Lardy, C. (2008). What criteria can be used to identify the level of implementation of reform in an undergraduate science course? *Research Brief No. 2*. Tuscaloosa, AL: The Office of Research on Teaching in the Disciplines. <http://nseus.org> and <http://www.teachingdisciplines.ua.edu>

Sunal, D., Sunal C., Sundberg, C., Mason, C., & Lardy, C., Zollman, D., & Matloob-Haghanikar, M. (2008). What characteristics are found in reformed and non-reformed undergraduate science courses? *Research Brief No. 3*. Tuscaloosa, AL: The Office of Research on Teaching in the Disciplines. <http://nseus.org> and <http://www.teachingdisciplines.ua.edu>

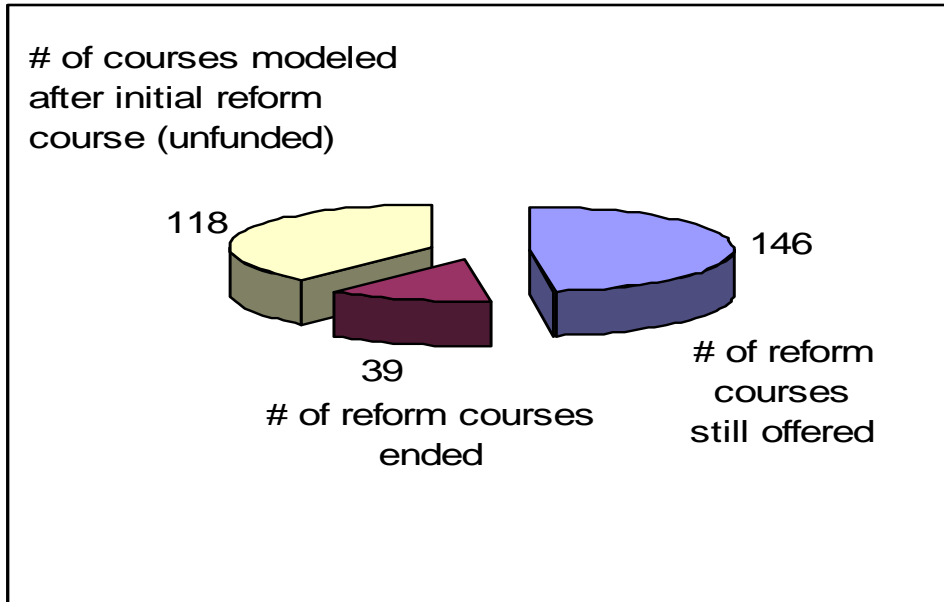


Figure 1: Reform courses at study population of higher education institutions



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