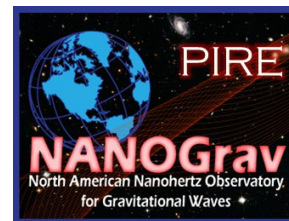




NANOGrav-PIRE

SMARTSTART EVALUATION NEWSLETTER



VOLUME 1, QUARTER 4

JUNE 2011

This newsletter presents findings from formative and summative evaluations conducted in Quarter 4. NANOGrav-PIRE participants completed the annual PIRE project post-survey to assess the quality of project components and progress in meeting project goals. Working group reports were analyzed to assess achievement of project benchmarks.

QUALITY & USEFULNESS OF PIRE PROJECT COMPONENTS

Post-survey respondents rated each project component conducted during this project year from 1 - 4, 1 = *not useful* to 4 = *very useful*. Most components had average ratings between *somewhat useful* and *very useful*, except cultural training received in home country, which on average was rated less useful.

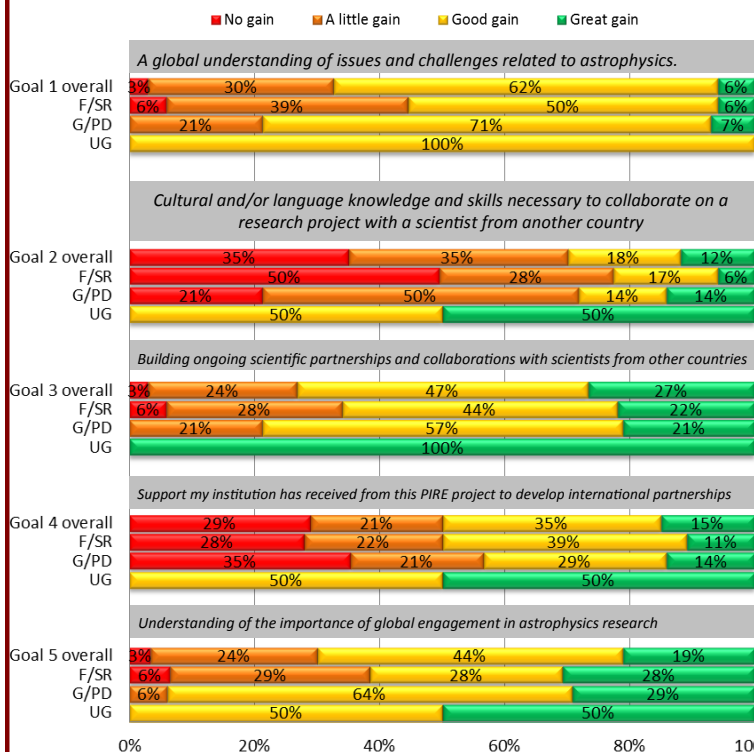


PROJECT GOALS

- Goal 1: Knowledge
- Goal 2: Education
- Goal 3: Partnerships
- Goal 4: Institutional Capacity
- Goal 5: Workforce Development



PROGRESS IN MEETING PROJECT GOALS



One statement from each goal area was chosen to be included in the graph; results for other statements related to project goals can be found in the report. Overall, undergraduates reported greater gains. Statements for goals 2 & 4 had the greatest reports of *no gain*. Other selected findings are presented below.

Goal 1 - Knowledge: Advance new knowledge and discoveries at the frontiers of science while achieving 3 sigma sensitivity to gravitational waves (GWs) with strain of 2×10^{-15}

- ◆ I am knowledgeable about international perspectives on scientific information related to astrophysics ($p < .01$)
- ◆ Collaborations with scientists from other countries have increased my scientific knowledge ($p < .05$)

Goal 2 - Education: Facilitate greater student preparation for and participation in international research collaboration

- ◆ Graduates/post-docs **decreased**, as they potentially learned they are less prepared than they originally believed themselves to be: I am comfortable collaborating on scientific project with researchers from a variety of countries ($p < .05$).

Goal 3 - Partnerships: Enable U.S. scientists to establish collaborative relationships and operate effectively in teams comprised of partners from different nations and cultural backgrounds

- ◆ 37 total collaborations have developed due to the project

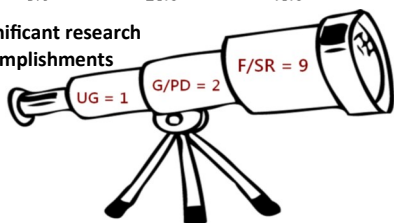
Goal 4 - Institutional capacity: Strengthen the capacity of institutions and networks to engage in and benefit from international research and education collaborations

- ◆ 8 grant proposals submitted and 6 proposal funded

Goal 5 - Workforce development: Develop a diverse, globally-engaged science workforce by catalyzing a higher level of international engagement by the U.S. science community

- ◆ 95% of undergraduate participants are sure they want to pursue an astrophysics career

of significant research accomplishments



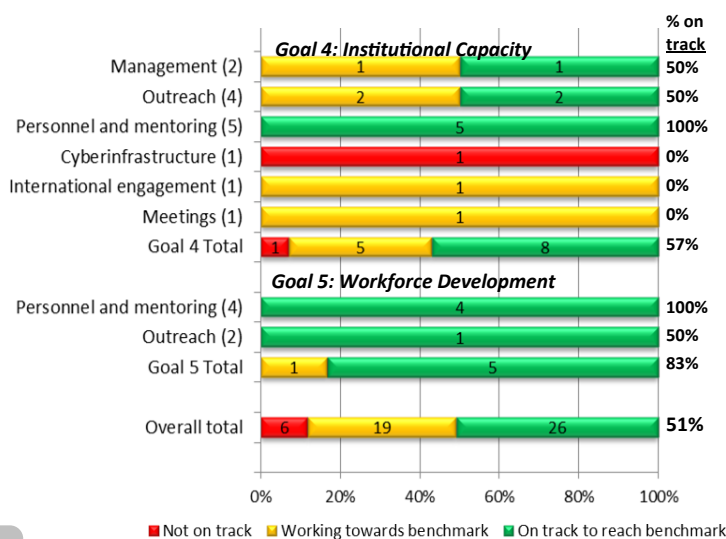
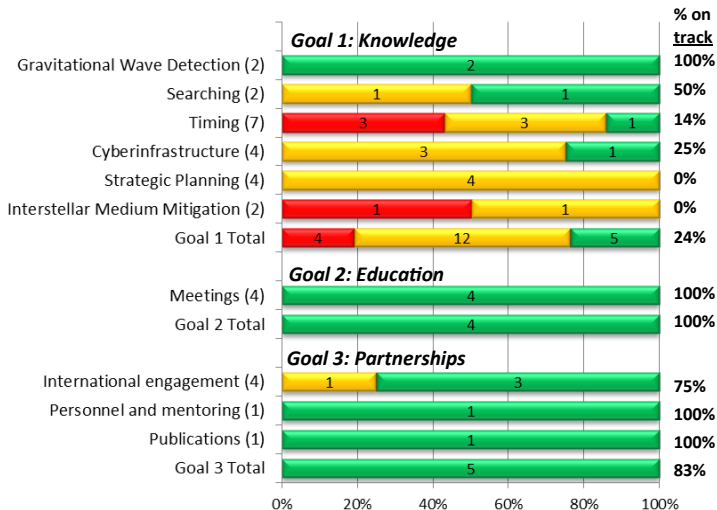
- Faculty/Senior Researcher
- Graduate Student/PostDoc
- Undergraduate

SUMMARY OF GOAL ACHIEVEMENT: BENCHMARKS



Working group reports were analyzed to assess progress made towards achievement of annual benchmarks.

- Goals 2 (education—100%), 3 (partnerships—83%) and 5 (workforce development—83%) had the most objectives on track to reach benchmarks
- Goal 4 (institutional capacity—57%) made progress especially in the area of personnel and mentoring
- Goal 1 (knowledge 24%) had the lowest overall achievement of objectives; greatest achievement in gravitational wave detection (100%) and searching (50%)



COMMENDATIONS & RECOMMENDATIONS

- **Demographics**— Encourage female and underrepresented minority participation in the PIRE project & strongly encourage undergraduates to participate in the PIRE surveys
- **Project Components**—Program components were rated high, with a lower rating for cultural training. Training students received will be explored more in depth on the research abroad post-survey. Research abroad students would benefit from a general research abroad training
- **Importance of evaluation**—77% of PIRE participants completed the pre- and 57% completed the post-survey. Stress the importance of project evaluation. Provide opportunities for the evaluator to talk to project participants about the evaluation plan, upcoming evaluation activities, and evaluation findings at PIRE meetings.
- **PIRE participation**—Confusion exists about who is a PIRE participant and why international partners need to complete PIRE surveys. Identify criteria of being a PIRE participant. Develop a list of benefits that international partners receive from being a PIRE member and share these benefits with them at PIRE-related meetings.
- **PIRE project survey**—The evaluator recognizes that the project survey is long however validity needs to be maintained. The evaluator will work with the project management team to reduce the length of the survey in a manner that will assess annual achievement of project goals while maintaining integrity of results.



Goal Recommendations:

- **Goal 1: Knowledge**—No overall gains between pre- and post-survey responses - 24% percent of benchmarks are on track and 57% are working towards being met. Review participants' perceived gains by position to identify strengths and weaknesses in participants' knowledge. Review the four areas that are not on track to meet benchmarks and determine if these are still viable objectives, and if so, develop a plan to get them on track.
- **Goal 2: Education**—No significant gains yet 100% of goal 2 benchmarks are on track to being met. On the goal 2 benchmark chart identify specific areas of learning and expertise in which project participants should receive training.
- **Goal 3: Partnerships**—Grad students/post-docs demonstrated significant gains; 83% of the goal 3 benchmarks are on track and one is working towards being met. Participants express anxiety over the lack of organization, planning, and forethought in training and placing research abroad students. Continue to develop and maintain positive relationships with international partners & create a committee that plans training opportunities, evaluates, places, and tracks research abroad students.
- **Goal 4: Institutional Capacity**—No significant gains; 57% of the Goal 4 benchmarks are on track and 36% are working towards being met. Continue to work with US and international institutions involved in this project as they develop procedures to assist students and faculty to participate in research abroad experiences.
- **Goal 5: Workforce Development**—No significant gains; 83% of the Goal 5 benchmarks are on track and one is working towards being met. Continue recruiting undergraduate students into astrophysics education.



UPCOMING EVALUATION ACTIVITIES FOR QUARTER 1

- Evaluation of Student Workshop and ISM at West Virginia University and Snowshoe Resort
- Research Experience Abroad evaluations
- Baseline survey for new project participants