

# Dartmouth Physics & Astronomy

## GAANN Recruitment Plan



Presenter: Mary Hudson, PI  
November 6, 2009

## 5. RECRUITMENT PLAN (5 points)

The Secretary reviews each application to determine the quality of the applicant's recruitment plan, including--

- (1) How the applicant plans to identify, recruit, and retain students from traditionally underrepresented backgrounds in the academic program for which the fellowships are sought;
- (2) How the applicant plans to identify eligible students for fellowships;
- (3) The past success of the academic department in enrolling talented graduate students from traditionally underrepresented backgrounds; and
- (4) The past success of the academic department in enrolling talented graduate students for its academic program.

### Strengths

Dartmouth's institutional commitment to attracting students from traditionally underrepresented backgrounds is obvious. The College's efforts are complemented by the department's efforts, which has an outstanding record of attracting women.

Students will be identified through their grades in undergraduate courses, letters of recommendation, and personal statements. At the department's expense, promising students will be invited to visit and spend a day or two interacting with faculty and other graduate students.

The Department has a system in place to evaluate and monitor student success with a current retention rate of 78%.

### Weaknesses

No weaknesses noted

Reader's Score: 5

# Institutional Commitment to Recruiting a Diverse Community of Researchers and Educators

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- ❑ Director of Graduate Recruiting and Diversity, Sandra Spiegel oversees the recruitment of all Arts and Sciences graduate students with an emphasis on recruiting underrepresented students.
- ❑ Physics & Astronomy GAANN PI & CoI:  
Grad. Program Advisor Prof. Mary Hudson  
Grad. Admissions Chair Prof. Kristina Lynch:
- ❑ We have awarded 32% of our PhD degrees to women over past 10 yrs, 16% nationally in physics; 25% our tenure faculty are women
- ❑ Underrepresented minorities at 30% across CISM institutions (Center for Integrated Space Weather Modeling)
- ❑ 78% retention in Dartmouth PhD program; 100% underrepresented minorities, currently 4% students



Sandra J. Spiegel



at Dartmouth since 1984  
**Mary Hudson**



**Kristina Lynch**

# GAANN Program Recruiting

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Jessica Hewitt, Lt. USAF  
Balloon Van Allen belt studies  
Instructor, USAF Academy  
Prof. Robyn Millan, advisor

## **Campus visits offered to admitted students**

Meghan Mella, GAANN Fellow  
Auroral rocket studies  
Prof. Kristina Lynch, advisor



# Application and Selection

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- GAANN applicants identified through online ApplyYourself
- Transcript, GREs, 3 recommendations, personal statement of teaching & research interest
- Dartmouth's highly ranked undergrad teaching\* attracts students with strong teaching interest
- Flexibility in admissions to achieve balance with research opportunities and a diverse pool, has sustained high percentage of women (1/3)

\* Dartmouth #1 in *U.S. News* ranking of 'best undergraduate teaching at a national university'

# GAANN Offer Attracts Students

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Ryan Johnson:

- Offered FAFSA-pending GAANN
- Qualified for post-admission external support (Harvard – Smithsonian Astrophys. Obs.)
- Also attracted by:
  - GAANN offer
  - Teaching opportunities
  - Research facilities (Kitt Peak, South African Large Telescope (10m SALT))



# Increasing Diversity

- ❑ Minority recruitment challenge in physics, pursued through link with Center for Integrated Space Weather Modeling (CISM)
- ❑ Partner with Prof. Ramon Lopez, UT Arlington  
Prof. Amy Weinberger of Alabama A&M
- ❑ CISM runs annual *Space Weather Weekend* to attract students from underrepresented groups to our grad programs, resulted in CISM PhDs
- ❑ 30% CISM grad students (AAMU, UC Berkeley, BU, Dartmouth, Rice, U Colorado, U MD, UT Arlington) from underrepresented minorities.

# Space Weather Weekend: Case Study in Recruiting Diverse Student Population



- **A space weather weekend for students from minority serving institutions or students attending either SACNAS or NSHP/NSBP meetings who are considering graduate school is held annually in April (05-09).**
- **AAMU hosts the event and arranges local logistics.  
UT Arlington arranges stipend and travel.**
- **Scientists and staff from CISM institutions make presentations and run labs.**

## **Space Weather Weekend Objectives**

- **Use the excitement of space weather to recruit students from Minority-Serving Institutions to apply to CISM schools**
- **Expose participants to a new field of science in an innovative teaching environment.**
- **Establish personal connection with participants, typically 12 students**



# Women in Lab & Field Research

## □ Kristina Lynch Rocket Group



- Kristina Lynch
- Meghan Mella (GAANN)
- Lisa Gayetsky
- Phil Bracekowski
- Phil Fernandes

Jim LaBelle's HIBAR Rocket, Poker Flat, AK

## □ Robyn Millan's Balloon Group Groundbased lightening

- James Lundberg (GAANN)
- **MINIS 2005 - Churchill & Antarctica**
  - Leslie Woodger, PhD June 2010
- **BARREL 2008, 09 - Antarctica**
  - Jessica Hewitt, MS 2009
  - Brett Anderson
  - Karl Yando



Meghan in the lab



Meghan at Poker Flat, AK



Balloon Lake launch  
Churchill Manitoba,  
MINIS 2005  
Campaign



# Recruiting Tools Summary

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- ❑ Strength of academic and research program
- ❑ Strength of undergrad teaching opportunity
- ❑ Support (Dartmouth 5-year support upon admission: Dartmouth Fellowships, GAANN; NSF, DOD and NASA RA funding)
- ❑ 32% women grads, 25% women faculty
- ❑ 78% retention rate
- ❑ 5 yr PhD completion target (5.5 average)
- ❑ Visits to campus, undergraduate outreach activities

# Backup Slides

## New MS program in Space Science AAMU



CISM leveraged 2 new hires in Space Sciences at AAMU,  
1 directly with .5 FTE support  
1 indirectly with .5 FTE NASA grant

## First Graduates From New AAMU Space Physics Program

- Alabama A&M University (AAMU) is a CISM member institution that has recently added a new M.S. concentration in space science with NSF CISM and NASA support. Ms. Fana Mulu (left) and Ms. Samaiyah Farid (right) are the first physics graduate students to complete the new space physics concentration. They both received their Bachelor's degrees from AAMU in 2004; Samaiyah Farid **now PhD student** in solar physics at UNH

James Stith (American Institute of Physics), member CISM Advisory Council: 'Most PhDs awarded at mainstream universities to students from those universities, applies to students from underrepresented minorities as well.' Above is example of lateral recruiting.

# CISM Space Weather Weekend Recruitment Strategy (2005-2009)

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## □ **Recruitment Strategy**

- The recruitment using networks in the African-American and Hispanic Physics communities including NSBP and NSHP meetings
- Students received a \$200 stipend plus expenses
- 9-12 students have participated each year, e.g., from AAMU, Fisk U., Florida International University, Interamerican University of Puerto Rico, Lincoln University, Morehouse College, and Tennessee State University