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Make It Real - Undergraduate Research Opportunities

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TEAM ONE

Make it Real – Enhancing Undergraduate Research Opportunities

TEAM MEMBERS

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Project Sponsor: Herbert Hill, Undergraduate Research Opportunities

PROJECT DESCRIPTION

Theme one in the Quest for Distinction is for VCU to become a leader among national research universities by providing all students with high quality learning/living experiences focused on inquiry, discovery, and innovation in a global environment. Quest is grounded in a commitment to providing students with a diversity of experiences which are available at a premiere public research university. The goal of this project is to promote the wealth of research resources at the Medical College of Virginia Campus to Monroe Park undergraduates seeking research experiences and increase faculty and student participation in undergraduate research.

PROJECT GOALS

Undergraduate student participation in research has been shown to increase student engagement. Increased student engagement leads to better retention and higher graduation rates. Undergraduate student participation in research has also been shown to increase a student's expectations for attending graduate school and engaging in academic research.

Currently approximately 100-150 students per year participate in undergraduate research through the Undergraduate Research Opportunities Office. Of the students participating in research through the UROP program, many are Biology or Psychology majors. Most of the undergraduate students participating in research are enrolled in programs on the Monroe Park campus. These students tend to seek a biomedical sciences research experience. The majority of biomedical research takes place on the MCV campus. Therefore we have focused our efforts on increasing MCV faculty participation in research with Monroe Park students through a marketing campaign to increase awareness of undergraduate research opportunities.

1. Identify the barriers to MCV campus faculty engagement in undergraduate research mentoring
2. Market successful undergraduate students and research faculty experience in laboratories

STRATEGIES

1. Do a needs assessment with Herbert Hill, Director of UROP
2. Interview undergraduate mentors to determine the benefits and barriers to undergraduate research

ACTION STEPS

1. Use the interviews with the undergraduate research mentors on current undergraduate student research experiences to develop survey questions
2. Survey MCV faculty on current research resources for undergraduates
3. Use the mentor/undergraduate student experiences to create a marketing video, in collaboration with the Division of University Relations addressing the benefits and barriers for both faculty members and undergraduate students to engage in research

OUTCOMES

The survey, designed as a result of faculty mentor interviews, was sent out to MCV faculty and consisted of four questions covering the following general areas: Current involvement of undergraduates, Perceptions of needed supports and infrastructure, Willingness to participate workshop, Other information (open-ended response).

The MCV faculty included in the survey were selected from the Medical Faculty Expertise Directory 2010-2013 listings and faculty lists provided by UROP (n=131). The survey was administered through REDCap over a two week period and the response rate for the survey was 21.4% (n=28). When faculty were asked about what would increase their involvement in undergraduate research, compensation for mentoring and student pre-screening and preparation were among the most cited responses for increasing faculty involvement in undergraduate research. The full table can be found in Appendix 1.

The survey responses also helped to drive the interview questions for faculty mentors and their undergraduate students. The video, directed by Joseph Kuttenkuler and his team from the Division of University relations has been posted on the UROP website and the VCU homepage. The video also spawned an article attached to this executive summary as a PDF.

SUSTAINABILITY

The video highlighting undergraduate researchers and their mentors will live on the UROP website where it will be available to all students and faculty. The video should be included in faculty undergraduate research mentor workshops where new mentors are recruited.

RECOMMENDATIONS

1. Build infrastructure to support faculty mentoring and find ways to acknowledge faculty participation with undergraduate research.
2. Coordinate cross-campus efforts to engage undergraduates in research with the UROP office in order to; more effectively track metrics of undergraduate research participation, increase efficiencies in preparing students to engage in undergraduate research, create a larger more prepared pipeline of students to participate in research and, better utilize resources for supporting undergraduate research.

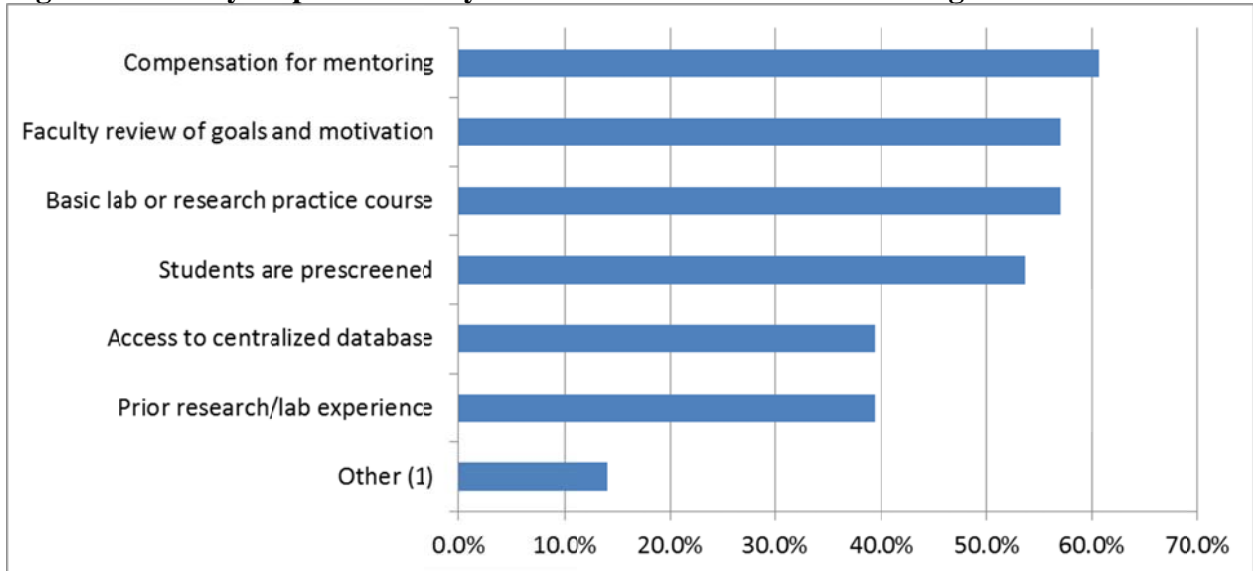
CONCLUSIONS

Undergraduate research can be an integral part in supporting student retention and student success. If faculty could be acknowledged or compensated in some way VCU might be able to increase faculty involvement in supporting undergraduate research. Faculty who participate in undergraduate research do it for the love of mentoring. We identified, through our investigations,

several efforts to prepare students for the research experience across both campuses. Getting all faculty efforts to coordinate with the UROP office would increase the pipeline and preparation of students and create efficiencies in cross-campus efforts.

Appendix 1

Figure 1: Faculty responses to ways to increase involvement in undergraduate research.

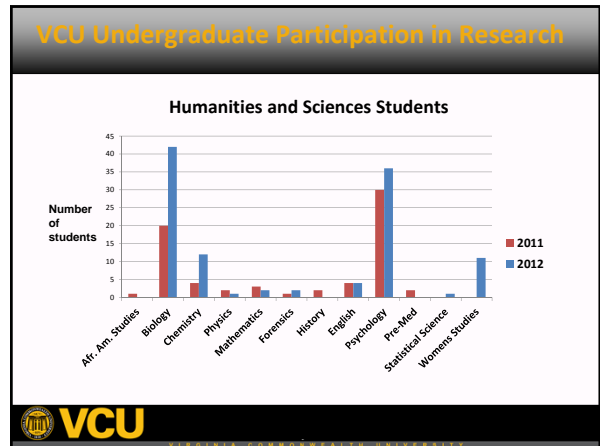


Making Research Real: Enhancing Undergraduate Research Opportunities





Lisa Abrams, Maria Carlton, Preetam Ghosh,
Joe Kuttenkuler, Juanita Sharpe



Project Goals

- Capitalize on the wealth of research resources at the Medical College of Virginia Campus.
- Coordinate cross-campus efforts increase faculty participation in mentoring undergraduate research projects.



Project Objectives

1. Market the benefits to students and faculty.
2. Determine why MCV faculty engage undergraduates in their research.
3. Identify the cross-university efforts to support the undergraduate research experience.

Make it Real – Student/Mentor Videos



Faculty Views?

Short MCV faculty survey via REDCap¹ (n=131)

Faculty represented a range of departments (n=28):

- Healthcare Policy and Research
- Internal Medicine
- Microbiology and Immunology
- Physiology and Biophysics
- Human Genetics
- Pharmacology and Toxicology

1. REDCap is an electronic data capture tools hosted at Virginia Commonwealth University and supported by the Center for Clinical and Translational Research (CCTR) and VCU Technology Services grant support (CTSA Award Number UL1TR000058)



Involvement of Undergraduates

Yes (71%)

Benefits: energy, enthusiasm, teaching opportunities, rewarding, increased productivity

"They bring a lot of energy to the lab...gives the post-docs and graduate students a good teaching experience."



Involvement of Undergraduates

No (29%)

Reasons: lack of student time, mixed experience, credit vs. contribution

"Past experience has been spotty at best. Some are great; others just want to get 'credit' and a letter for medical school without doing much."



Isolated Efforts



Moving Forward

- Coordinate isolated efforts to involve undergraduates in research with the Undergraduate Research Opportunity Program
- Build infrastructure to support faculty mentoring and track metrics of undergraduate research participation

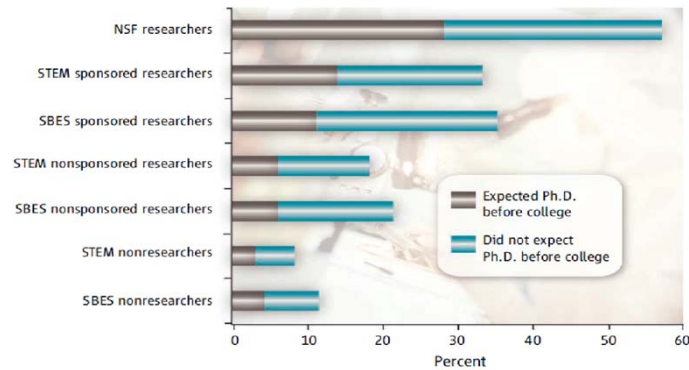


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- VCU Undergraduates: Carine Binyam, Tamara Haque, Brian Joseph, Kristen Wade
- The Division of University Relations
- GEHLI program staff



Impact of Undergraduate Research Participation on Student Success



Ph.D. expectations. Participation in undergraduate research opportunities affects expectations of obtaining a Ph.D.

Participation in research increases a student's interest in STEM and increases the expectations for obtaining a PhD after graduating from college.

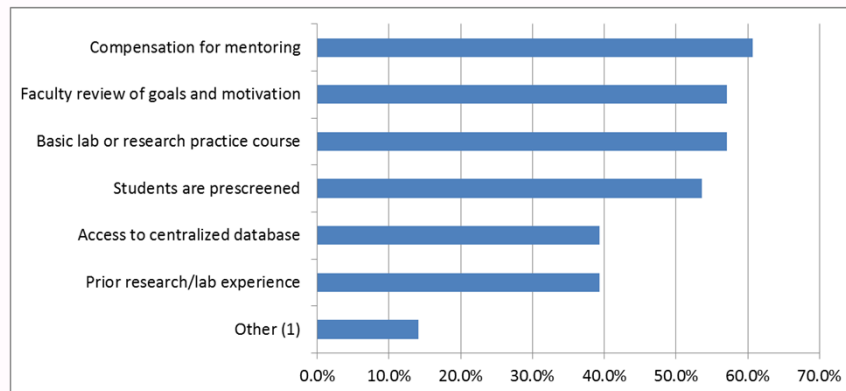
Russell, S.H., Hancock, M.P., and McCullough J. Science (2007) vol. 316 pp 548-549



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Supports for Increased Involvement



1. A common database or a way to facilitate recruitment would be helpful as we are not on the academic calendar year so we miss some undergrad deadlines; the University or our Unit show that they value this.



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