

UNveiling Undergraduate Research at VCU



GEHLI Team UNity
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VCU

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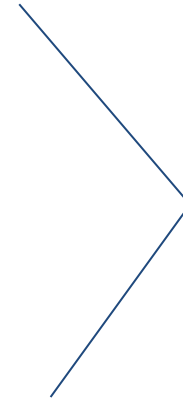
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INTRODUCTION

- ★ VCU is an urban, **research intensive** university
- ★ Took in over **\$460 million in sponsored funding** in FY 2023.
- ★ Listed among the **top 50** public universities for sponsored research.
- ★ Has a **mission** to expand higher education access to historically underserved populations.
- ★ **Quest 2028: Together We Transform** strategic plan.

INTRODUCTION

Quest 2028 One VCU: Together We Transform
Strategic Themes



Undergraduate
Research

WHAT IS UNDERGRADUATE RESEARCH?



Independent Faculty Research

- “Lab”
- “Research”



Student Coursework Research

- “Curriculum”
- “Teaching”

How can we increase faculty engagement with undergraduate students in research?

PROJECT GOALS

1. **Identify** real and perceived barriers and benefits for VCU faculty members to engage undergraduate students in their research.
2. **Recognize** misconceptions among faculty about including undergraduates in their research.
3. **Create** a menu of action items that can be implemented across the university to increase faculty enthusiasm for, and engagement in, the undergraduate research experience.

PROJECT STRATEGIES

Semi-Structured Interviews

Literature and Document Review

Contacting Peer Institutions

QEP Meetings Attendance

PROJECT STRATEGIES

Semi-Structured Interviews

- ★ Conducted with faculty and university stakeholders (n=35).
 - **Faculty from the following units:** College of Humanities and Sciences, College of Engineering, School of Business, School of the Arts, School of Medicine, School of Pharmacy, VCU Life Sciences, Wilder School Government and Public Affairs.
 - **University stakeholders:** Office of the Provost, Office of Undergraduate Research, CTLE, REAL, QEP steering committee members
- ★ Explored faculty experiences and perceptions.
- ★ Transcribed and analyzed to identify key themes.

PROJECT STRATEGIES:

Example Interview Questions

1. How do you engage students in your research? What **specific tasks** do you have them do?
2. What is the **value proposition** (or: “What are the benefits”) for you to include undergraduate students in your research?
3. What **barriers** have you encountered when promoting the inclusion of undergraduate students in faculty members’ research?
4. What could be some **strategies** to remove barriers and make it more enticing for faculty to include undergraduate students in their research or mentor independent undergraduate research?

THEMES: Benefits for Faculty

Rewarding experience for faculty providing mentorship to students

Students bring **new perspectives/insights**

Increases faculty **productivity, efficiency,** and **reach**

UGRs make **meaningful contributions,** to help enable high quality research

THEMES:

Benefits for Faculty

Amplifies student **recruitment and retention** in their program

Relationship building with potential future colleagues and collaborators

Promotes **diversity and inclusion** in research

Fosters **positive culture and community** within departments and programs

Broadens impact of research through increased dissemination

Faculty Insights

"But now I think actually I've been at it long enough that I can look at those few individuals who are now in their careers are doing this and I'm like maybe the best thing I did was actually mentor that person, maybe that was it."

"They're actually much more proficient in a variety of tasks than I am anymore. They're much more cutting edge in terms of data analysis and stuff than I am. I'm learning from them."

"One of the things that's developed...was trying to find ways to integrate my research into courses so that students get hands on experience."

"...our students are very good. They're very creative, they're very smart and capable. It's just how do we create a structure where faculty and students aren't so stressed to just find the time to work together."

"...I love hiring the Federal Work-Study students because I care more about giving the money to them than I care about that overall outcomes in terms of the research outcomes..."

"To be honest, at this point for me...they're (UGR) in large part the reason the science happens anymore."

"I think the students that I've worked with have had a lot of really great ideas about how we can bring the research back to the community."

THEMES:

Barriers to Faculty Engagement in Undergraduate Research

Lack of **time** for mentoring students due to responsibilities

Lack of **funding**

Logistics: lack of infrastructure, administrative and management oversight, facilities; lack of centralized resources

Lack of **rewards or recognition**

Lack of **awareness** of existing programs supporting UGR at VCU

Limited **graduate student availability** to assist with UG mentoring

THEMES:

Barriers to Faculty Engagement in Undergraduate Research

Lack of **preparation and training** of undergraduates to contribute to research

Limits to undergraduate students' **reliability and availability** to work

Perception that undergraduates could **slow down their research productivity**

Communication and collaboration issues across disciplines/departments (Lack of sharing best practices)

Some disciplines can be **“solo” profession**. Co-authors/contributors can impact you negatively with P&T

Faculty Insights

"A consistent issue I find in VCU is that there's this request to do something and then we're given toothpicks and duct tape to do it."

"We don't have Einsteins coming in here solving all of our problems right away. There's a learning curve."

"I felt like I was doing so much management of the project that it was really more about that than the research itself."

"You get a project grant, but you get no time."

"I think a lot of people won't take undergraduates because you don't get any credit for training undergraduates here in the medical campus, in the medical school."

"I don't necessarily know how much benefit faculty really get from undergraduate student researchers. It feels much more like a service opportunity for the students."

"Whenever we ask for more resource, they're like, oh, that grad assistant that you have, we're not sure we can fund that this year."

RECOMMENDATIONS

1. Review promotion and tenure process

- ★ Review promotion and tenure process to **acknowledge mentoring** or undergraduate researchers.
- ★ Clearly define undergraduate research mentorship **contribution towards overall P&T**.
- ★ Encourage departments to **recognize faculty** for mentoring and student engagement.

2. Expand financial support

- ★ Establish specific lines of funding to **pay student researchers**.
- ★ Allocate funds for **TAs** and **graduate student** tuition and stipends to free up faculty time for mentoring
- ★ **Increase funds** for research program stipends (i.e. UROP), infrastructure, and course development

3. Offer incentives to faculty

- ★ **Schedule flexibility** for faculty involved in undergraduate research mentorship
- ★ Offer **financial incentives and awards** for faculty mentoring undergraduates (i.e. professional development funds).

4. Provide preparatory training to students

- ★ Develop and offer course-Based **Research Training**.
- ★ Develop **department-specific** one-credit courses for undergraduates.
- ★ Equip students with **foundational research skills** by the end of their second year.

5. Foster cross-disciplinary collaboration

- ★ Share **success stories, available opportunities,** and **existing funding sources.**
- ★ Share **best practices, models, and lessons learned.**
- ★ Promote a **culture** of undergraduate research across departments and campuses.

FINANCING AND RESOURCES

Budget Item	Cost Estimate
Hiring Teaching Assistants (per hour, or course credit)	\$12-\$14
Marketing for success stories/symposium/etc (One time)	\$5,000
Monetary Incentives (likely through UROP program) <ul style="list-style-type: none"> For Students for 144-166 hours (i.e. part time during semester) for 360 hours (i.e. full-time during the summer) For faculty in professional development funds 	\$1500-\$2000 \$5000 \$500-1,000
Department/University level awards (For a ceremonial plaque)	\$100-\$175
Adding undergraduate research to P&T process	No cost
Course release costs	Faculty buyout costs vary by school/college.
Training/development for centralized student training in research	TBD
Training/development for faculty mentoring and undergraduate research	TBD
Funding for graduate students who can mentor undergraduate researchers (per student (including out-of-state tuition, health insurance, and stipend).	\$68,000
Human resource support for undergraduate research year-round (1 FTE)	\$65-75k + fringe

CONCLUSION

Our vision is to:

- Pursue a future where barriers are dismantled.
- Dispel faculty misconceptions about undergraduate researchers.
- Increase faculty mentorship.
- Create innovative models.
- Provide a wider access to impactful educational practices.
- Increase student retention.

Together, we can empower faculty-engaged partnerships and instill a new era of innovation and mentorship into VCU's legacy.

Questions?