

NISTS 2021

NOT-SO-SECRET TRANSFER AGENTS FEBRUARY 23-25, 2021 | VIRTUAL CONFERENCE

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Educational Session

Fostering Equity in STEM Career Attainment: The Community of Transfer Researchers Program

Diversity and Inclusion, Transition Programs and Services

Attendees will explore the call to action, design, and implementation of the Mason Science Community of Transfer Researchers, an innovative learning community launched at George Mason University in Fall 2018 to address barriers to undergraduate research for our incoming STEM transfers. Explore the blended cohort and navigational programming, faculty and near-peer mentorship, and optional learning community courses that have jumpstarted transfer engagement in the university's scholarly research community. Review our promising outcomes and lessons learned as we continue to expand our efforts to enhance access and inclusion in undergraduate research.

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Fostering Equity in STEM Career Attainment: The Community of Transfer Researchers Program

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STEM Career Readiness: A Pre-Assessment

Time for our virtual warm-up activity!


- **Press pause, and visit <https://forms.gle/aM6ytgaRzZxTQsRx6>.**
- **Complete the (very short) pre-assessment survey.**
- **This assessment data is anonymous.**
- **You can view the aggregate data from this survey.**





STEM Transfer
Student Story –
“Natalia”





Demystifying STEM Experiential Learning

- **Internships**
- **Volunteering/Shadowing**
- **Undergraduate Research**
- **Other Experiential Learning**



Framing the Issue: Equity & Inclusion

- **Transfer students are more likely to represent minoritized groups: who are underrepresented in STEM:**
 - **Racial & Ethnic Minorities**
 - **First-Generation College Students**
 - **Immigrants, Dreamers, and Generation 1.5 Students**
 - **Post-Traditional Students & Student-Parents**
 - **Differently-Abled & Neurodiverse Students**
- **Transfer students are more likely than native university students to:**
 - **Balance extensive employment and caregiving responsibilities**
 - **Demonstrate financial barriers, food and housing insecurity, etc.**



Framing the Issue: Career Attainment & Undergraduate Research

Cited as a key admissions requirement for most STEM graduate programs, including those using holistic admissions criteria.

Highlighted as a critical preparatory experience and expectation for pre-medical and other pre-health professions students.

Key to successful attainment in entry-level public and private sector careers in STEM Research, Development, Design, & Practitioner Occupations.





Connecting the Dots: Framing Questions

How much do STEM transfer students know about undergraduate research, both before and after transferring?



Do the professionals providing academic and career advising to community college students promote undergraduate research as an integral part of their academic pathway?



Do the professionals providing academic and career advising to STEM university transfer students highlight the importance of undergraduate research to matriculating transfer students?



George Mason, we have
a problem...





Needs Assessment/ Data Collection



Top Barriers to Research for Transfer Students

- **Limited awareness of importance of research experiences.**
- **Limited social/cultural capital and resources.**
- **Barriers to navigating opportunities and identifying research mentors.**
- **Limited network of faculty.**
- **Implicit (and explicit) bias.**



MasonScience Transfer Pathway Intervention Model

Pre-Transfer

Transfer Transition

First Year Transfer

Continuing Transfer

Post-Baccalaureate



The Mason Science Community of Transfer Researchers

- **Yearlong, voluntary learning community for new COS transfer students**
- **Five Pillar Approach:**
 - **Navigational support**
 - **Mentoring**
 - **Networking & career readiness**
 - **Community-building**
 - **Learning community courses**





Navigational Support

- **Face-to-face meetings**
- **Webinar sessions**
- **Virtual student engagement platform**
- **Guided navigation of institutional resources**
- **Frequent guest speakers**
- **Integrated informational support for transfer students**
- **Academic & career pathways planning**



Mentoring

One-on-one supplemental meetings with faculty program mentor.

Referrals to discipline-specific faculty mentors and research mentors.

Regular engagement with Transfer Ambassadors

Referrals to industry mentoring.



Networking & Career Readiness

- **Step-by-step guidance on developing faculty and professional networks.**
- **Internal student research opportunities database.**
- **Access to microcredentials and mandatory lab/research training.**
- **Resume/CV and cover letter support.**
- **Internal and external research program application support.**
- **Graduate/health professions school pathways planning.**
- **Entry-level career pathways planning.**



Community-Building

Student-led discussion and Q&A in all meetings.

Sessions for first-semester university transfers.

Transfer ambassador presentations and 1:1 mentoring.

Invitations to academic symposia/departamental events.

Connecting students by research interests and career affinity.



Learning Community Coursework

**COS 300: Professional Preparation for
STEM Disciplines**

**COS 400: Problem-Solving and Leadership
in STEAM**

- **Global and intercultural problem-solving**
- **Scientific writing**
- **Scientific communication and presentation**
- **Overview of scholarly research**
- **STEM research project design**
- **Design-thinking**
- **Leadership and entrepreneurship**

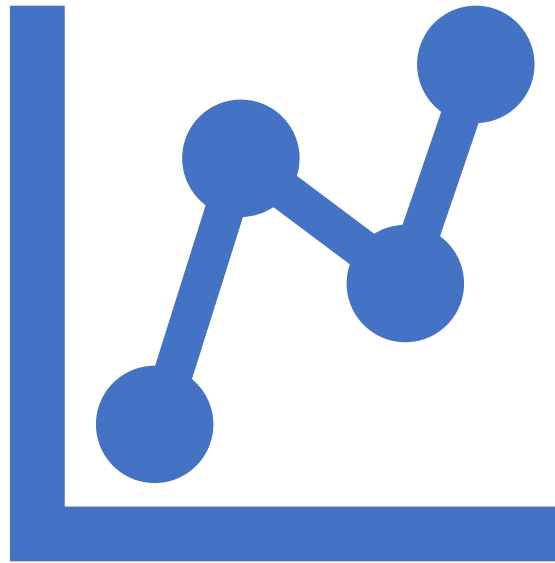


Transfer Researchers Cohort 1 Data

- **100% of Cohort 1 obtained a degree-related experiential learning experience within one year of transfer, including.**
 - **OSCAR URSP**
 - **OSCAR Summer Impact**
 - **Aspiring Scientists Summer Internship Program (ASSIP)**
 - **Biology Research Semester**
 - **Research Assistantships with Mason Faculty**
 - **External Experiential Learning (NSF REU, STEM Internship, VAW, GEO, etc.)**
- **100% of Cohort 1 in good academic standing after one year.**
- **89% of Cohort 1 students opted into the second year, as AACTR Transfer Ambassador.**



Lessons Learned, So Far...



- **Establish and maintain strong connections across two- and four-year colleges (Student Services, STEM faculty, etc.).**
- **Collect quantitative and qualitative data to make your case.**
- **Curate and promote undergraduate research opportunities to STEM students pre- and post-transfer.**
- **Offer both virtual and face-to-face programming.**
- **Look at master schedules prior to scheduling sessions.**
- **Emphasize networking skills and building faculty connections.**
- **Address impostor syndrome early and often.**





Our Next Steps

- **Program expansion to serve current Community College students.**
 - **Webinars**
 - **Virtual faculty mentoring**
 - **Mason campus visits**
- **Summer Bridge Research program for matriculating Community College graduates.**
 - **Lab safety training**
 - **Flexible, virtual and on-campus research opportunities**
 - **Holistic selection criteria to engage minoritized student populations**





Questions?

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