

Partnerships for International Research Experiences - Learning from Faculty

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PROJECT TEAM



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MOTIVATION & RESEARCH DESIGN



INTERNATIONAL RESEARCH EXPERIENCES FOR STUDENTS (IRES)



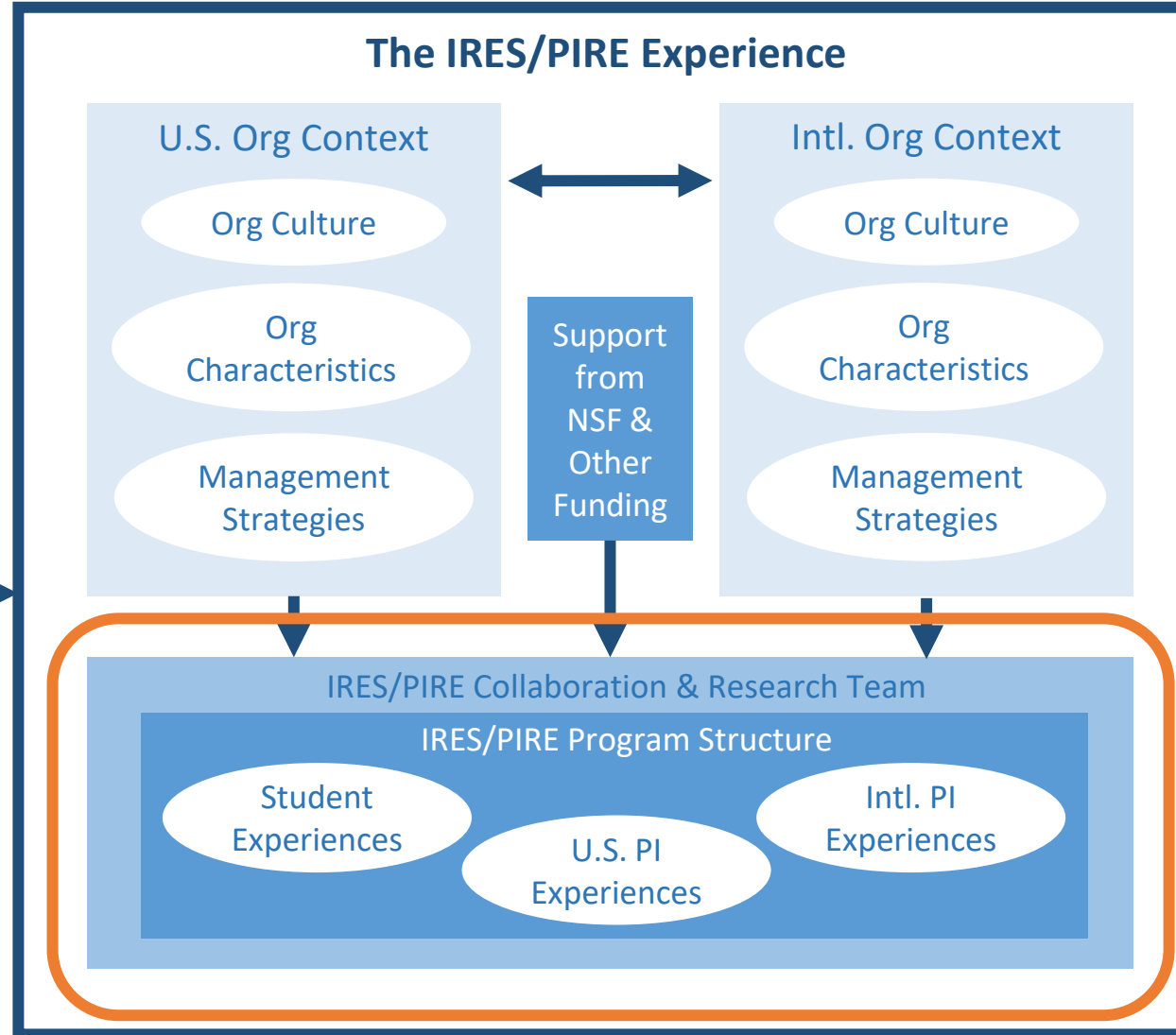
- Supports international research and research-related activities for U.S. science and engineering students
- **Purpose:** to enhance U.S. leadership in research and education and to strengthen economic competitiveness through **training the next generation of research leaders**
- Supports cohorts of **undergraduate and/or graduate students** in collaborative research at an international site with **mentorship from international researchers**

Building Partnerships

Pre-IRES/PIRE Characteristics & Experiences

- Existing research collaborations
- Previous research funding (e.g., seed grants)
- Other experiences: Fulbright, Sabbatical, Peace Corps
- US collaborator from international location
- Existing student program (e.g., study abroad)

The IRES/PIRE Experience



Program Outcomes

IRES/PIRE Outcomes

- Student Outcomes
- Research Outcomes
- U.S. PI Outcomes
- Intl. PI Outcomes
- Impact on U.S. Org
- Impact on Intl. Org

Program Design

PROJECT BACKGROUND

Research Question:

How are the **international research collaborations** that support IRES programs formed?

Motivations:



Study abroad is often hard for STEM students to fit in



Funded programs reduce barriers to access



Research abroad fits well with STEM programs



Little research on the design and outcomes of research programs

STUDY DESIGN

Participants: PIs of IRES and PIRE Grants Initiated between 2010-2019

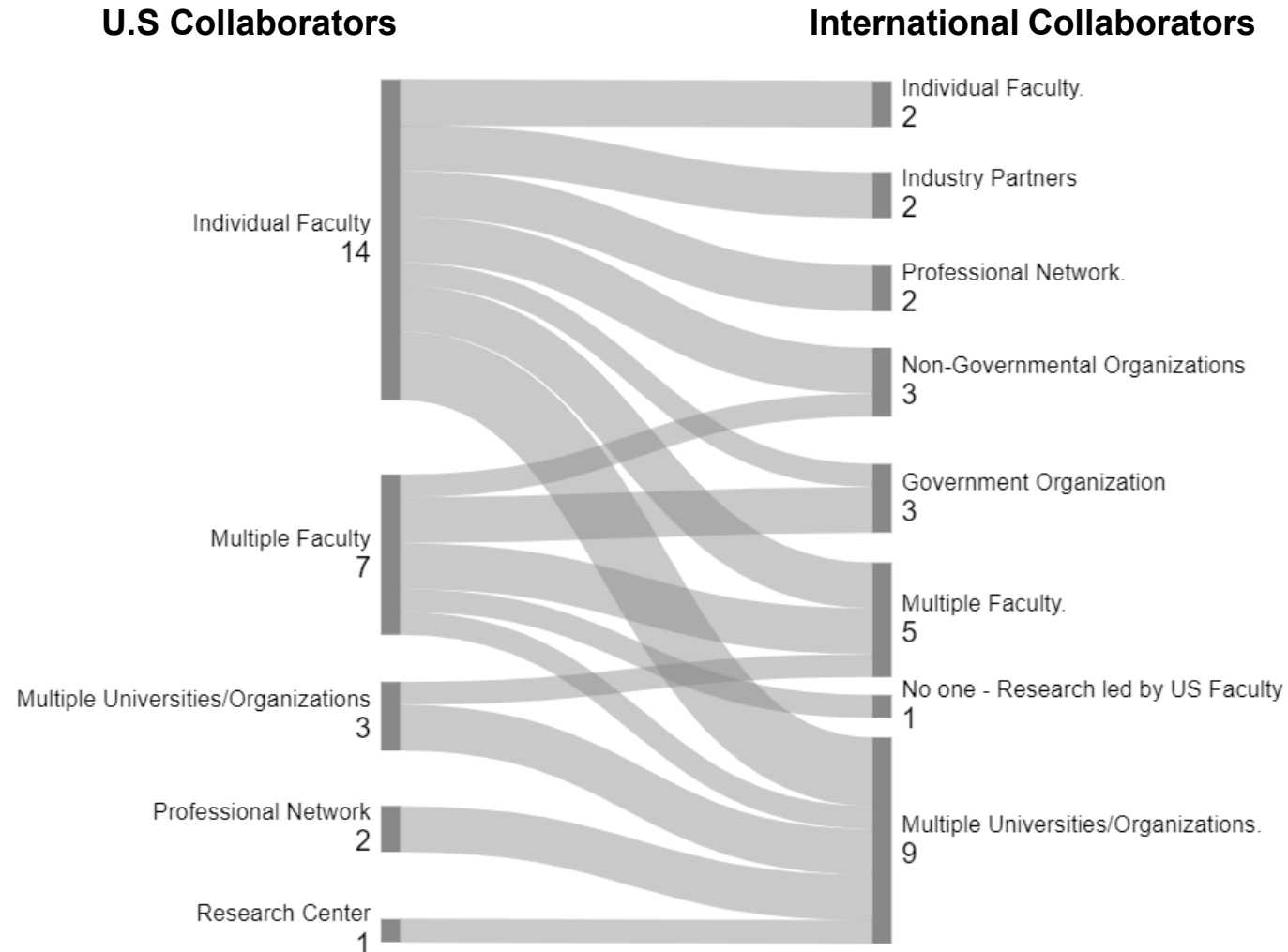
Interviews:

- 25 Participants
- 1 hour in length

Topics Discussed:

- Creative approaches to designing IRES programs
- Unique structures that enabled access or improved research outcomes
- Origin of international research partnerships

STRUCTURES OF IRES PROGRAMS



BUILDING PARTNERSHIPS

PARTNERSHIP FORMATION



Existing Collaboration



Extensive Time Abroad

Professional Networking

PARTNERSHIP FORMATION

Existing Collaboration

- Ongoing research collaboration
- Previous grants together
- Existing study abroad program
- Former student at partner organization

We had this connection through my colleague who's the co-PI who keeps in touch with a lot of his former students [...] We had a couple of our students in the Peace Corps in Madagascar working on a different project. And that was how we learned the landscape of what was going on in Madagascar. [...] So we had a foot in the door in Madagascar, but the big connection was my co-PI: his former student is the one who started the NGO [that we partnered with].

Participant 3

PARTNERSHIP FORMATION

Extensive Time Abroad

- Fulbright sent PI abroad
- Peace Corps connection
- Post doc abroad
- Sabbatical abroad
- PI is originally from the partner country

I was living in Morocco as a Fulbright scholar in 2018, 2019. And [my co-PI] was there, she had a fellowship [...] and then we got the idea to write the grant. [...] Since we were both interested in this argan oil production, we adapted some of the methods that she used in her dissertation. And then I had experience [...] with this NGO and they host study abroad programs and they also have been involved in the argan tree in some of the communities that they work in. So that was how we started the partnership.

Participant 25

PARTNERSHIP FORMATION

Professional Networking

- Met at a conference
- NSF supported collaboration building
- Key person connects collaborators
- University or College MOU

The two universities initiated discussion about a broader collaboration between these two universities, all departments. [...] These kinds of memorandums of understanding tend to be very general [...] And so what the two chemistry departments decided to do is [start out] with mutual visits. There was a group of [international institution] people that came to [U.S. institution] several times and gave lectures [...] and then a group of [U.S. institution] students went to [international institution] and again, gave lectures there and talked with faculty and students. And many of those people that went back and forth serve as mentors for the students

Participant 2

PARTNERSHIP FORMATION



Existing Collaboration

- Ongoing research collaboration
- Previous grants together
- Existing study abroad program
- Former student at partner organization

Extensive Time Abroad

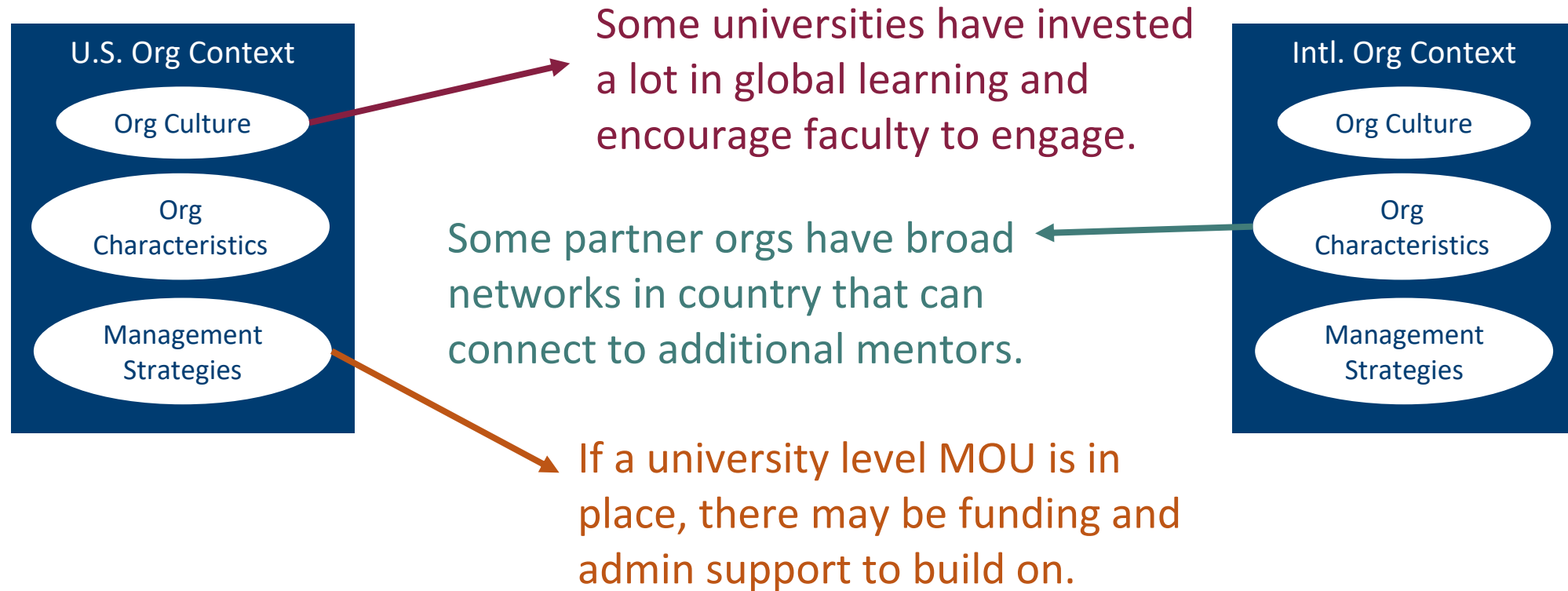
- Fulbright sent PI abroad
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Professional Networking

- Met at a conference
- NSF supported collaboration building
- Key person connects collaborators
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In most cases, the IRES project is not the first step in forming a partnership.

ORGANIZATIONAL INFLUENCES



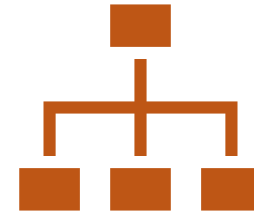
Understanding available organizational support is essential in designing and running an IRES program

IMPLICATIONS & FUTURE RESEARCH

IMPLICATIONS



International research partnerships are developed in a variety of ways and many of them are ongoing relationships, built over the course of several projects.



Organizational factors can influence the development of research partnerships – at both the institution in the US and the institution abroad.

WHEN DOES IRES MAKE SENSE?

IRES can help build a partnership, but may not be a good place to start.



FUTURE RESEARCH

- How does this framework fit the development and functioning of international research collaborations more generally?
- Who develops international research collaborations?
- What research development pathways lead researchers to develop international research collaborations?

Thank you



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IRES Resources:
<https://global.eng.vt.edu/Resources/IRES>