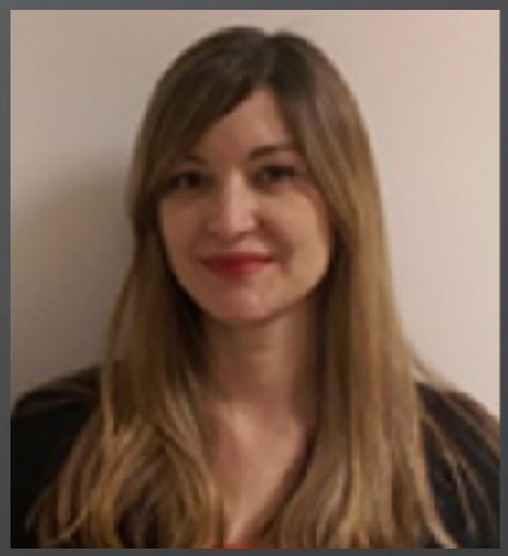
Recruitment, Evaluation & Tracking

Daniela Raicu

DePaul University

Audrey Rorrer

UNC Charlotte



Jamie Payton

Temple University

Recruitment, Evaluation & Tracking

Goals:

- Learn about CISE Evaluation Toolkit: Common Application, A la Carte Survey, Alumni Tracker
- Learn about Successful Recruiting methods
- Consider measurement approaches
- Learn about the resources available through the CISE REU PI Guide website

CISE REU SITES

CISE REU Evaluation Toolkit

114+ REU sites served since 2010

Purpose

1. Educate and support CISE REU PIs in site evaluation

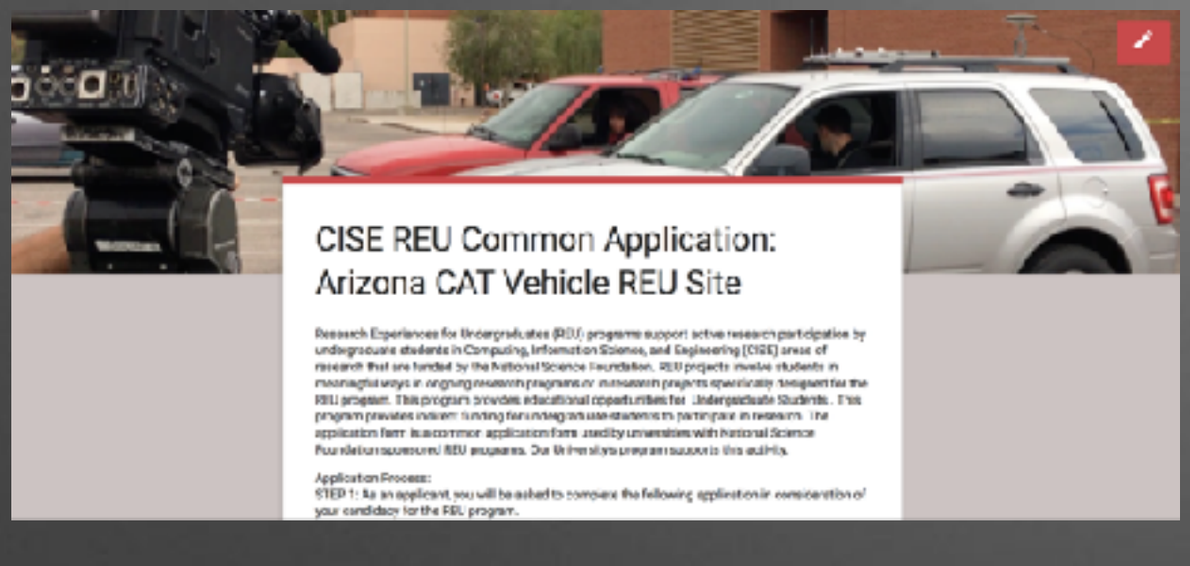
2. Inform CISE community of aggregate outcomes

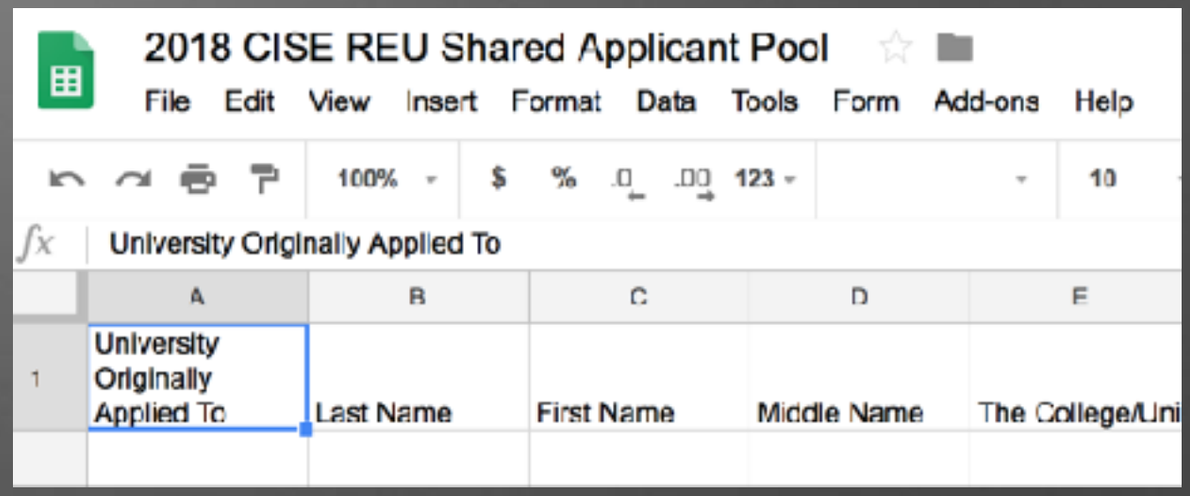
Tools

- Common Application
- Shared Applicant Pool
- A la Carte Survey
- Alumni Tracking Tool

https://reu.uncc.edu/cise-reu-toolkit

Common Application & Shared Applicant Pool





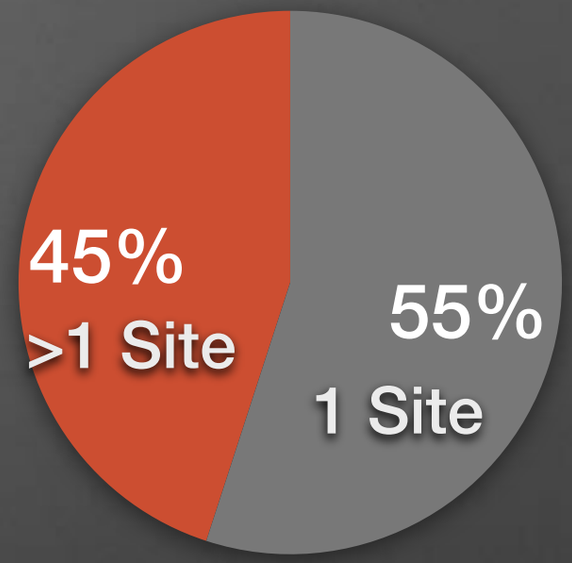
- Request
  - Customize
  - Embed
- Select
- Share
  - Release
  - Consent

Common Application Trends

Site Descriptors	2010 (N=13)	2011 (N=20)	2012 (N=22)	2013 (N= 26)	2014 (N=25)	2015 (N= 23)	2016 (N= 27)	2017 (N=33)
Upper Range of # Applicants	152	176	212	299	232	349	286	266
Avg Applications per Site	77	79	93	112	102	122	108	128
Largest # of Sites Applied to by Individual	30 (n=1)	6 (n=1)	7 (n=2)	18 (n=1)	14 (n=1)	16 (n=1)	9 (n=3)	12 (n=1)
% Female	27%	26%	24%	28%	27%	26%	32%	27%
% URM	28%	34%	36%	31%	31%	35%	33%	26%

URM= underrepresented minority group members;
includes all groups except caucasian and asian
*Computing Research Association Taulbee Survey 2015-16

2017



CS BS Degrees in US*
18% to Women
11% to URM

Recruiting Discussion

Recruiting Discussion

- What can be done to increase the number of applicants?
  - The average is 128 applicants in 2017
  - The largest number of applicants is 266 in 2017
- What can be done to increase the percentage of female and under-represented applicants?
  - Women applicants represent 27% of all applications
  - Under-represented applicants represent 26% of all applications

A la Carte Survey Constructs

A la Carte Survey

- Piloted 2010
- Deployed annually
- 38 CISE REU Sites participated 2017

CONSTRUCT	ORIGIN
SELF-EFFICACY	Bandura (1997); LAESE (AWE Assessment Project)
GRAD SCHOOL	Ajzen's (2001) theory of planned behavior
ATTITUDES	Hoegh & Moskal (2009)
HELP-SEEKING	Struthers, Perry & Menec (2000)
GRIT	Duckworth & Quinn (2009)
RESEARCH SKILLS	Survey of Undergraduate Research Experiences (Lopatto)
SCIENTIFIC LEADERSHIP	Chemers, et al. (2011)
SCIENTIFIC IDENTITY	Chemers, et al. (2011)
MENTORING (POST)	Berk, et al. (2005)
SATISFACTION (POST)	Working Group
5 POINT LIKERT SCALE ITEMS	

Sample Survey Items

CONSTRUCT	SAMPLE ITEM
FIRST ITEM	Please indicate the specific field applicable to your research project:
SELF-EFFICACY	I can understand research literature
GRAD SCHOOL	For me, to apply to graduate school is (extremely good/extremely bad)
ATTITUDES	I like to use [x] to solve problems
HELP-SEEKING	When I do poorly on an exam….
GRIT	I am diligent
RESEARCH SKILLS	Formulate a research hypothesis
SCIENTIFIC LEADERSHIP	I know how to be a good team member
SCIENTIFIC IDENTITY	I feel like I belong in science
MENTORING (POST)	My mentor was approachable
SATISFACTION (POST)	How satisfied were you with your research experience

Methodology

Design

- Quasi-experimental: repeated measures

Procedure

- Email invitations to students
  - From PI during first week
  - From Rorrer during last week
  - Consent obtained from PIs and Students

A la Carte Participants

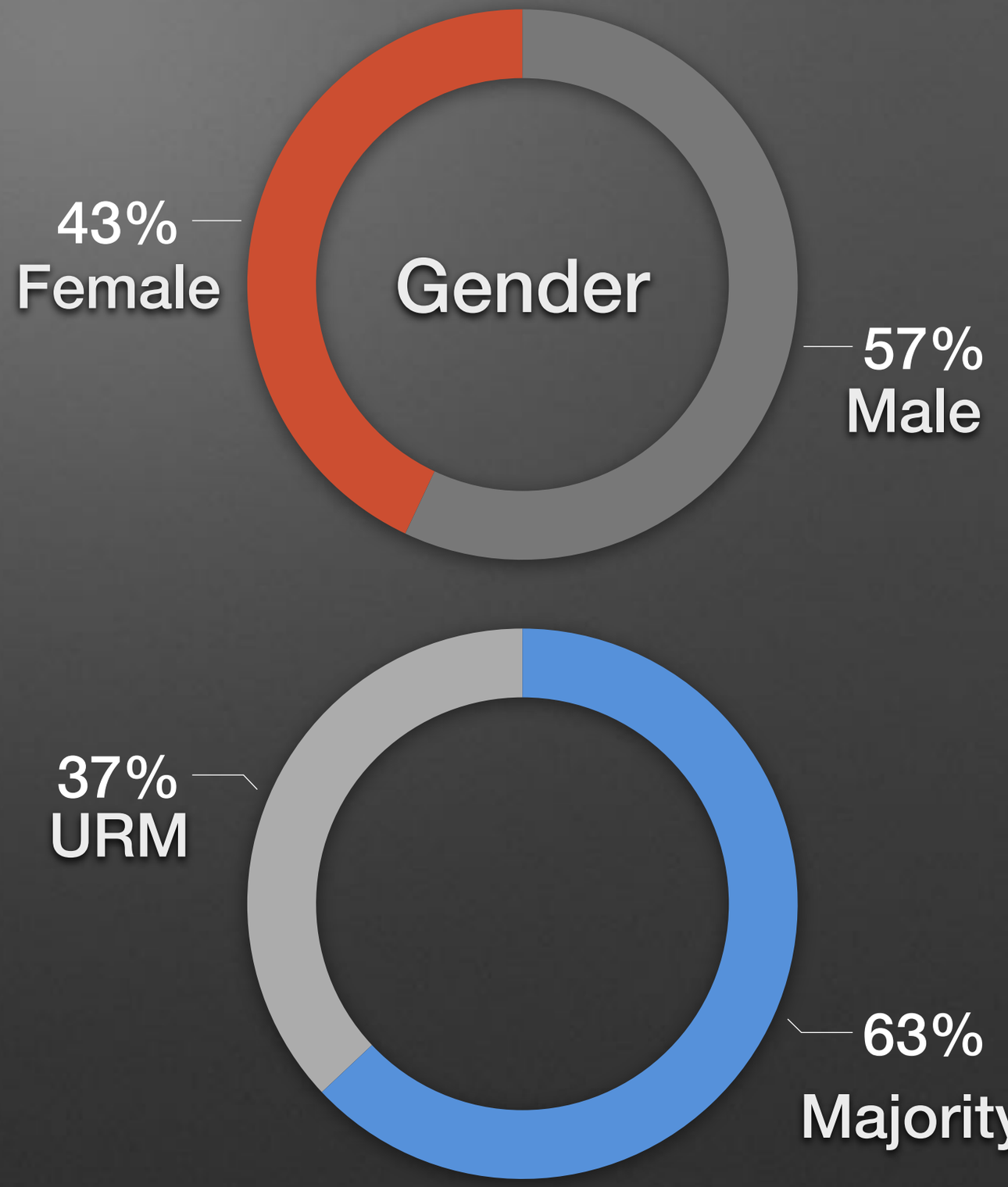
2017

38 sites used survey (52 total)

73% site participation

- Pre Survey n= 297
- Post Survey n= 249
- 234 matched pairs

Estimated response rate: 66%



Overall Results 2017

Statistically significant differences were observed:

+ Self Efficacy
+ Research
+ Leadership
+ Identity
- Graduate School
- Attitudes

Construct	Pre-Survey	Post-Survey	P
Self-efficacy	3.71 (.62)	***4.08 (.93)**	0.000
Graduate School	3.84 (.77)	3.67 (1.04)	0.09
Attitudes	4.36 (.51)	***4.06 (.97)**	0.001
Help-Seeking/ Coping	4.37 (.62)	4.29 (.97)	0.39
Grit	3.38 (.34)	3.31(.74)	0.72
Research Skills	3.20 (.64)	***3.82 (.96)**	0.000
Scientific Leadership	4.09(.73)	***4.15(1.07)**	0.000
Scientific Identity	3.37(1.03)	***3.47 (1.28)**	0.006
Mentoring	NA	4.44	NA
Satisfaction	NA	3.34	NA

Wilcoxon test

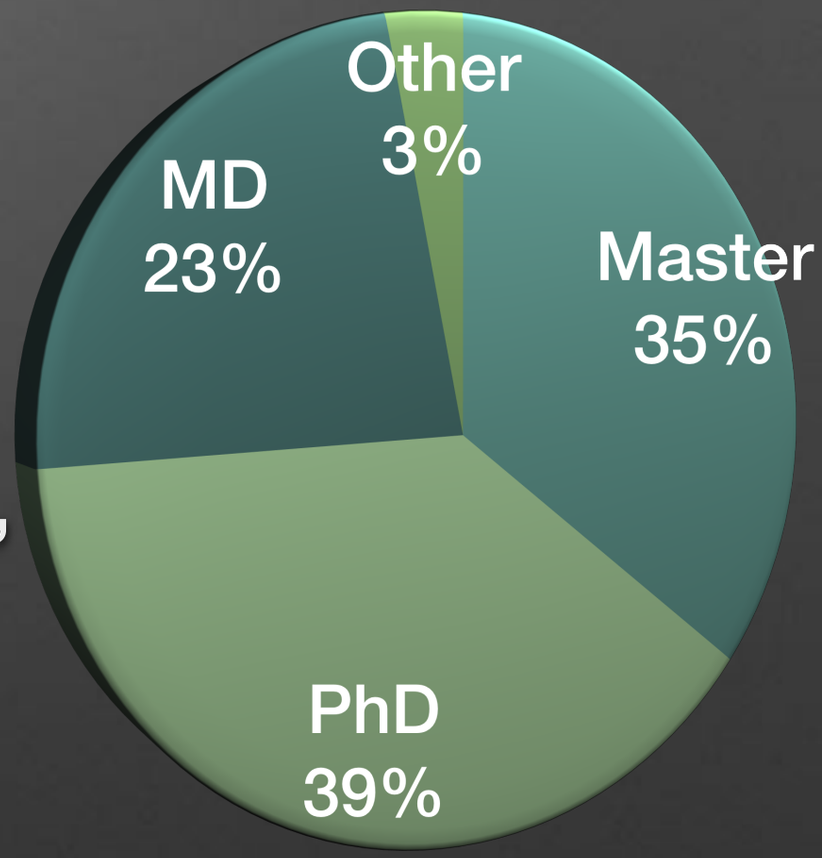
Measurements Discussion

Measurements Discussion

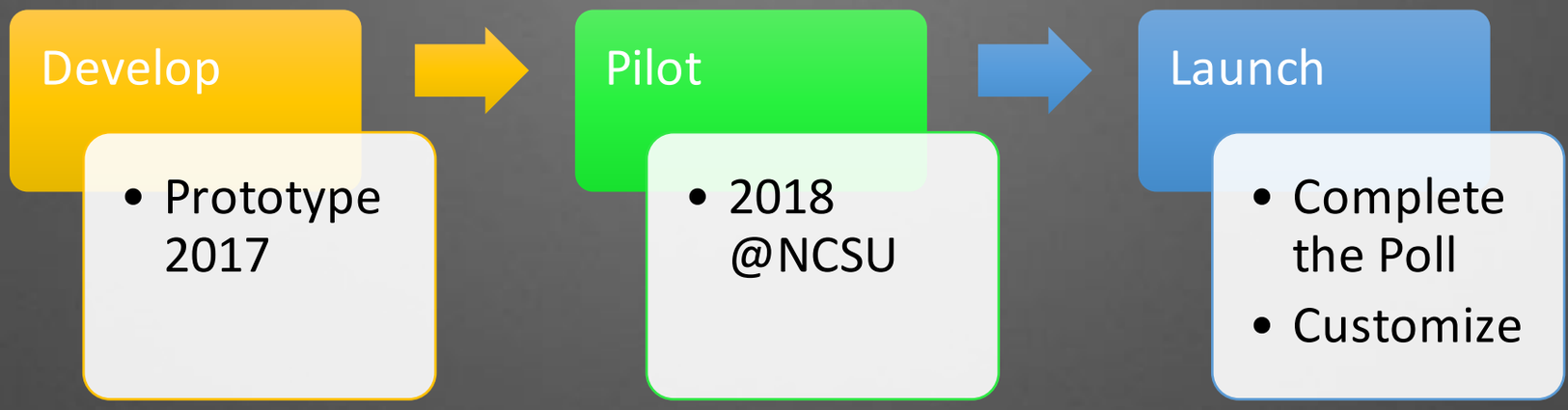
- What measurement categories are of interest?
- Should additional ‘modules’ be considered?
- Would anyone want to test new constructs?

Measurements Discussion

- What compels students to pursue graduate school?
- Should any graduate school (e.g. MS, PhD) or professional school (e.g. MBA, JD, MD) count?



Alumni Tracker



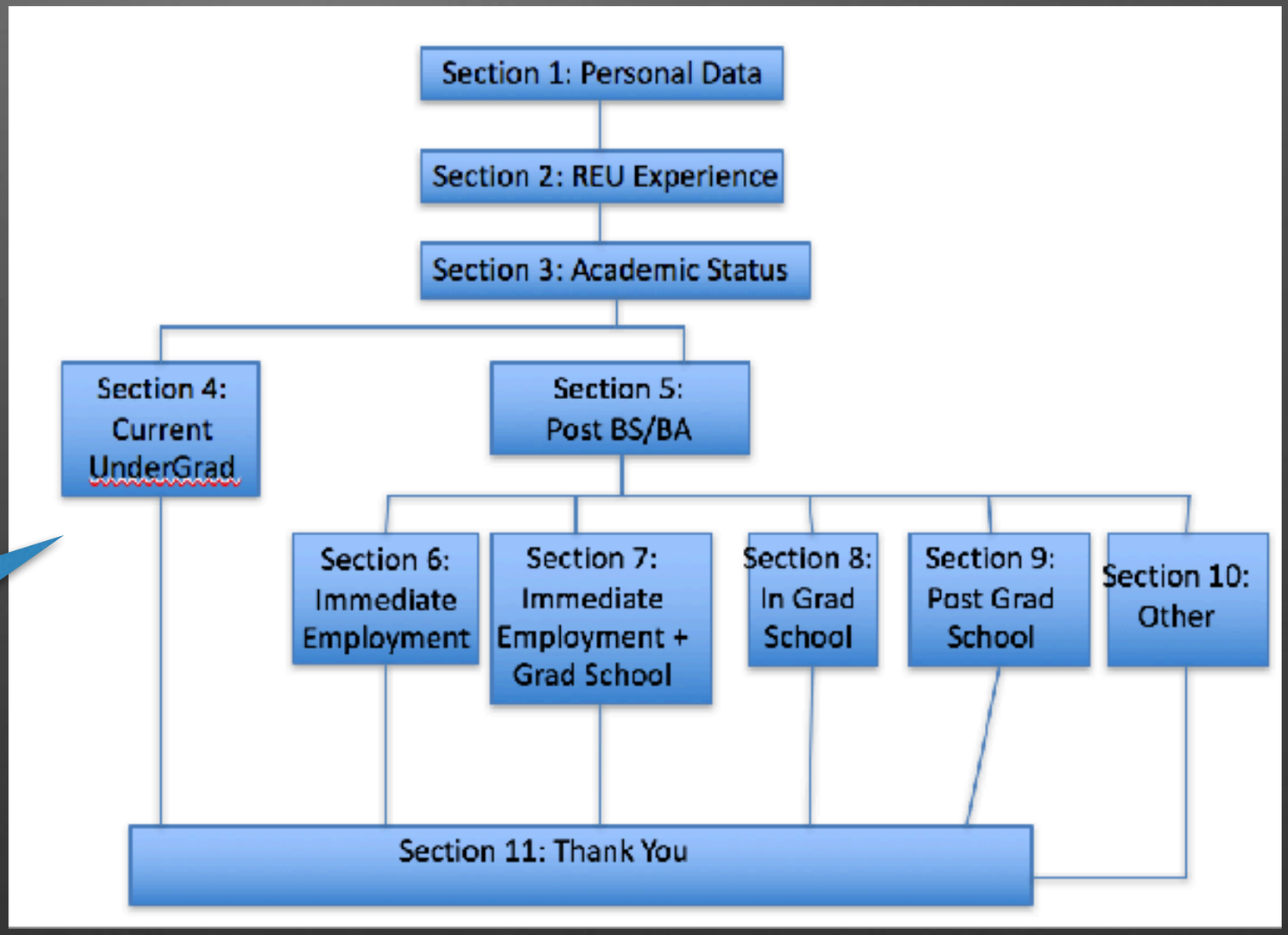
Working Group Advisors

- Tiffany Barnes, North Carolina State
- Claire Dugan, Northeastern
- Huirong Fu, Oakland
- Lazaros Gallos, Rutgers
- Stephen Gilbert, Iowa State
- Jamie Payton, Temple
- Tiffany Reardon, Berkeley
- Bonnie Swan, Univ. Central Florida

Alumni Tracker

Similar to Common Application: PI distributes

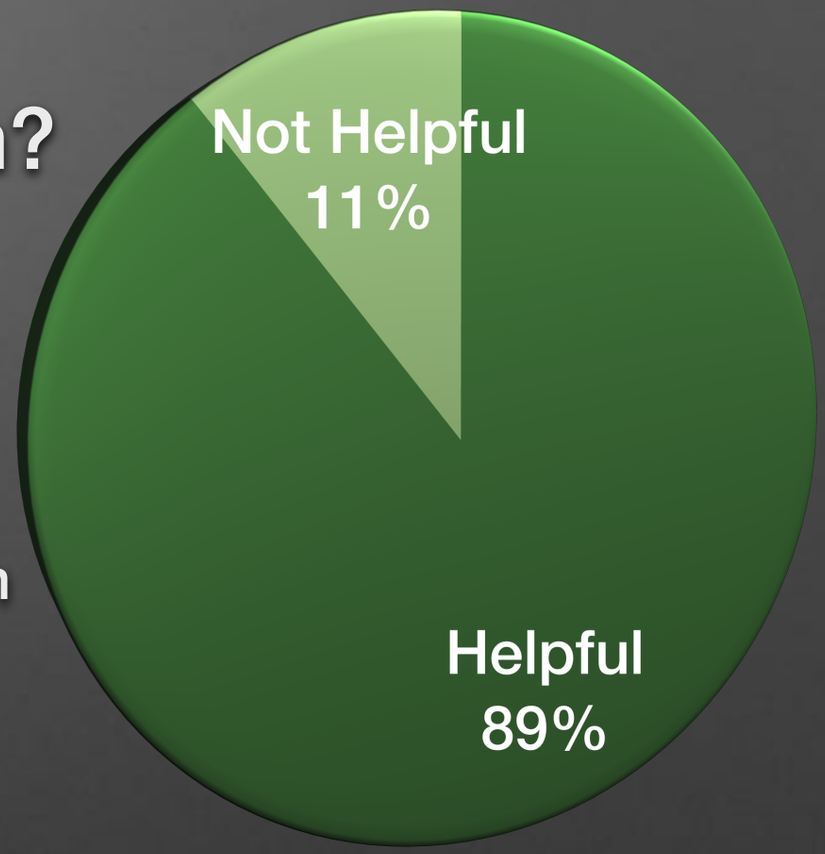
Feedback: audrey.rorrer@uncc.edu



Alumni Tracking Discussion

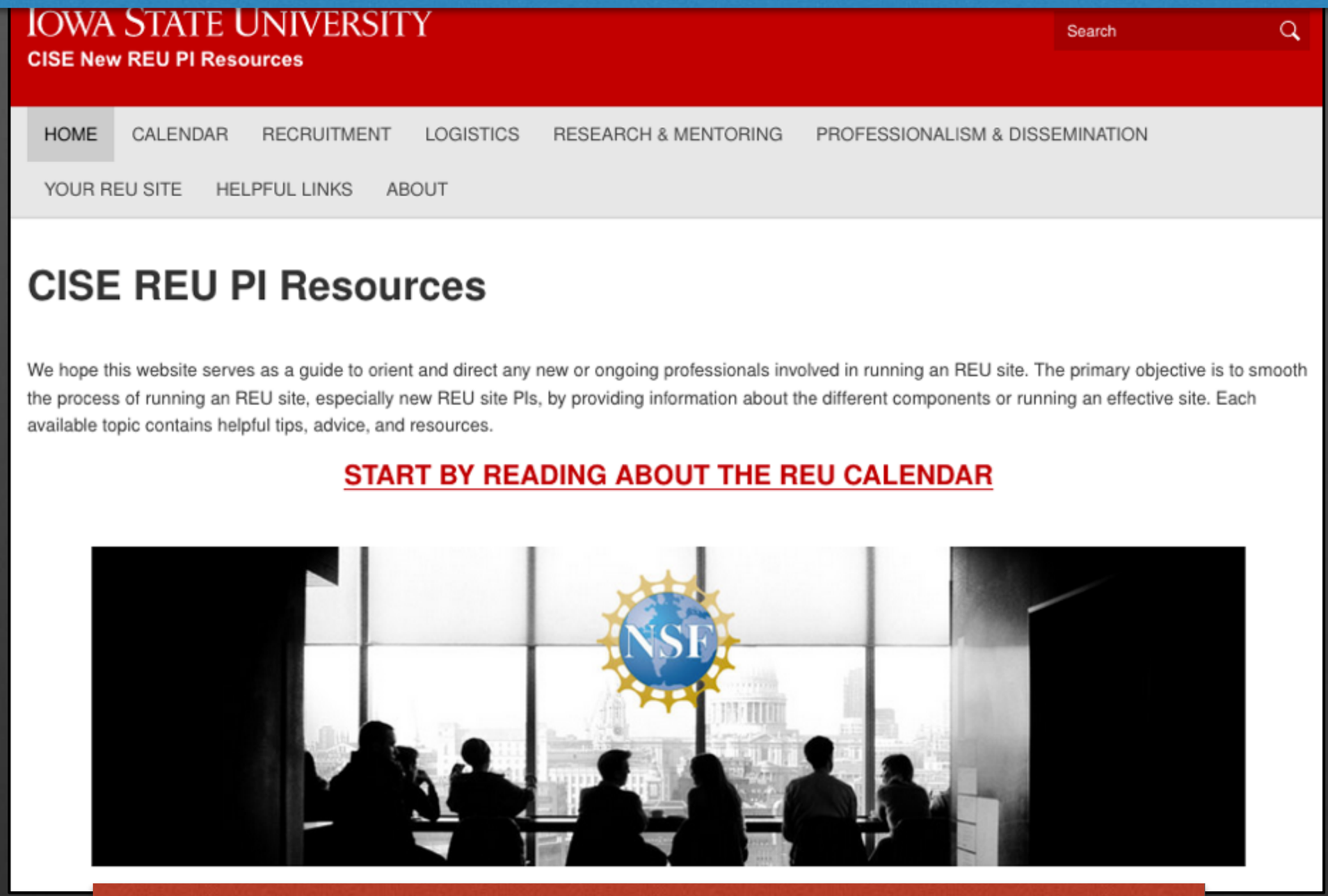
Alumni Tracking Discussion

- How to asses impact of REU program?
  - How helpful was the REU program been in choosing your career path?
    - “It convinced me that graduate school was the option for me”
    - “It showed me what the research was about and increased my passion for pursuing a career in research”
    - “This experience was like no other in the way it exposed me to life in academia. The resources it provided and the events planned were invaluable in my understanding of life and a career in research.”



CISE REU PI Guide Website

https://www.vrac.iastate.edu/cise-reu-pi-resources/



Mariangely Iglesias Pena[1], Stephen Gilbert[1], Jamie Payton[2]

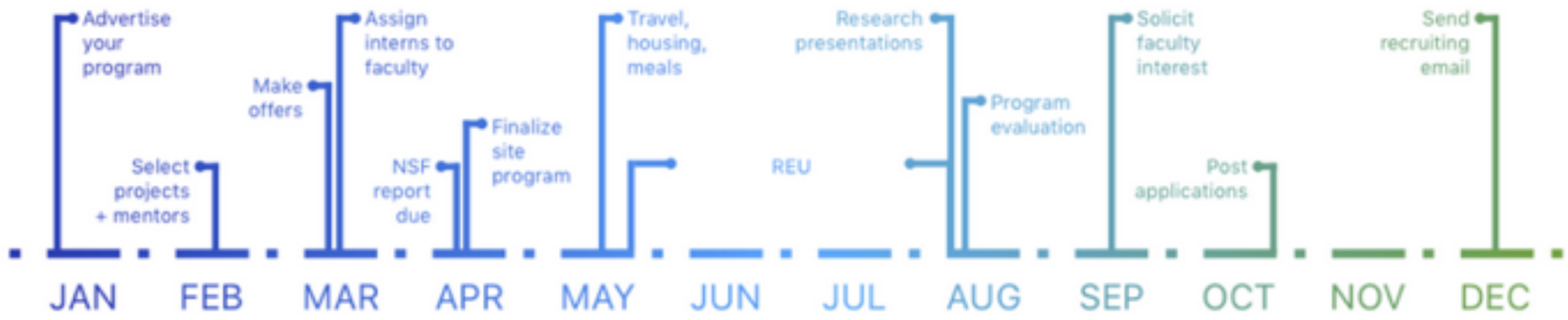
[1]Iowa State University, [2]Temple University

CISE REU PI Guide Website

www.vrac.iastate.edu/cis-reu-pi-resources

REU CALENDAR

REUs vary according to the research and the site structure, but a sample timeline of running an REU site is below. We have highlighted some important aspects that can affect the success of an REU site, followed by a quick yearly to-do sample list.



A detailed sample yearly to-do list:

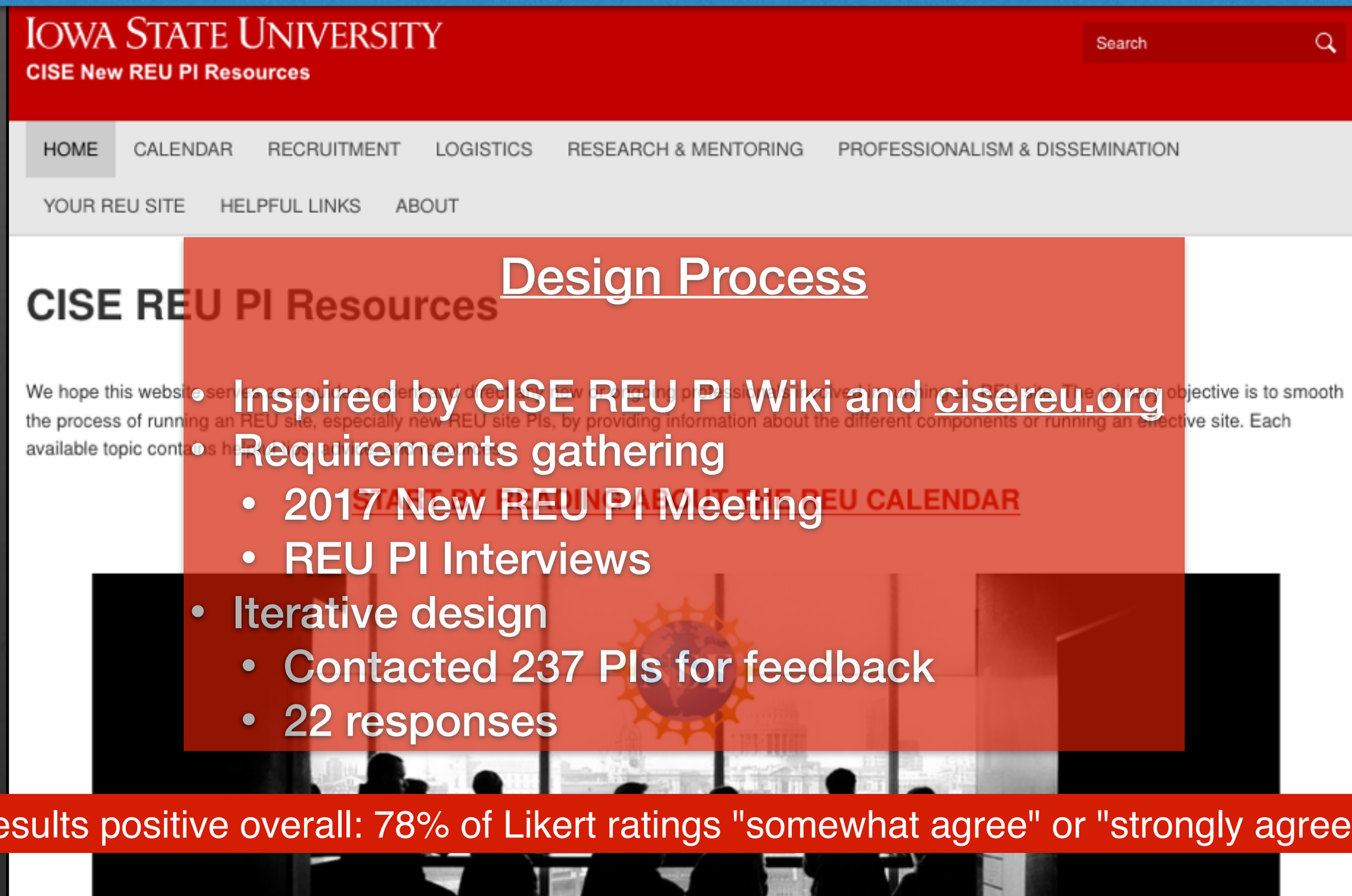
Printer Friendly Calendar List [PDF] | Word Template Calendar List [Docx]

JANUARY

- Set up your website with program dates and application procedure

CISE REU PI Guide Website

https://www.vrac.iastate.edu/cise-reu-pi-resources/



Design Process

- Inspired by CISE REU PI Wiki and cisereu.org
- Requirements gathering
  - 2017 New REU PI Meeting
  - REU PI Interviews
- Iterative design
  - Contacted 237 PIs for feedback
  - 22 responses

Results positive overall: 78% of Likert ratings "somewhat agree" or "strongly agree."

CISE REU PI Guide Website

https://www.vrac.iastate.edu/cise-reu-pi-resources/

To Meet Your Needs!

We are planning another design update this summer
Please comment or suggest documents that could be examples!

Email:
Stephen Gilbert, gilbert@iastate.edu
Jamie Payton, payton@temple.edu

Questions?