Survey of Faculty Mentors for REU Students

Administered end of summer 2004; summary of results

a thru j represent individual faculty responses

About how many undergraduate students have you mentored on research projects since June 2000, who did not participate in the REU program?

a	b	c	d	e	f	g	h	i	j
5	0	4	5	5	3	3	10	4	2

How many summer REU students have you mentored over the 5 years of the project?

a	b	c	d	e	f	g	h	i	j
6	3	1	1	2	8	4	5	6	2

On average, about how often did you **meet** with your REU student(s):

>1x per week once per week once every 2 weeks once per month

a	b	c	d	e	f	g	h	i	j
1/wk	>1x/wk	1 /2 wk	1/wk	1 /2 wk	1/wk	1/wk	1/wk	1 /2 wk	1/wk

Did you have one of your graduate students mentor the REU student(s)

Yes, always Generally Sometimes Never

a	b	c	d	e	f	g	h	i	j
yes	general	yes	some	yes	some	yes	yes	general	never

What criteria did you use or would you use to select students to work with (check all that apply; rank 1 = most important, down):

_____Student is from underrepresented group (minority, female)
_____Student has a high GPA
_____Student had previous research experience (desirable)
_____Student did not have previous research experience (desirable)
_____Student had technical background appropriate to your project
_____Student stated an interest in your research topic
_____Student stated an interest in future graduate school
_____Student was from a strong "research" university (desirable)
_____Student was from a college without a graduate program (desirable)
_____Student is closer to graduation (desirable)

	a	b	c	d	e	f	g	h	i	j
underrepresented grp	1	1	2	9	4	2	7	3	3	4
high GPA	3	2		4		2	3	5		5
previous research	2	2	3	2	3	3	2	7		
no previous research	4	3		10			10	4	4	
technical background	3	1		1	5	1	5		1	3
interest in topic	2	1	1	3	2	1	1	1	2	1
grad school interest	2	1	1	5	6	3	6	6	6	2
strong "res" univ	4	2		7	1		8	8		
college w/o grad prog	3	3		8			9	2		
closer to graduation	3	3		11	7		4	9	5	

List other criteria that you believe are important and rank in order with above.

Environmental Engineering student
Interest in Field Work

What activities did your REU students participate in/characteristics of their experience; check all that apply, state "always, sometimes, or never" if different REU students that you mentored participated in different activities [A = always; S = sometimes, N = never]

_____Involved in project design
_____Collected/analyzed data
_____Prepared/delivered final written report
_____Prepared/delivered final oral presentation
_____Went on research related field trip
_____Student understood how their work contributed to bigger picture
_____Student gained increasing independence over the summer
_____Student attended professional conference or otherwise presented their work after the summer

	a	b	c	d	e	f	g	h	i	j
project design	S	A	A	N	S	S	S	A		
collected/analy data	A	A	A	A	A	A	A	A	A	x
prep/deliv fin writ report	S	A	S	A	n	S	S	S	A	x
prep/deliv fin oral pre	A	A	A	A	A	A	A	A	S	x
res field trip	S	S	S	A	n	S	A	A		
bigger picture	S	A	A	A	A	A	A	A	A	x
gained independence	A	A	A	A	A	A	S	A	A	x
stu present work after summer	N	N	S	N	n	N	N	N	A	

How much did the REU student work benefit YOUR research efforts?
A lot moderate amount a small amount not at all

a	b	c	d	e	f	g	h	i	j
mod	large	mod	mod to great	large	mod	mod	mod	MOD	large

How many research publications in peer reviewed journals did you prepare that included REU students as co-authors? _0__; list

a	b	c	d	e	f	g	h	i	j
0	0		0	0	1	0	0	0*	0

In preparation: b 1; h 2; g 2;

Bielefeldt, A.R. and C. Vos. Biostimulation to Achieve Chromium Stabilization in Soil. Submitted March 2004 for peer review to the Journal of Environmental Quality.

Effects of trace metals and acidity on juvenile trout survival in the Snake River, Colorado- Andrew Todd, D McKnight and Rebecca Rule.

Mixing controls on deposition of hydrous metal oxides in stream confluences- Jonathan Heyl, Eliza Cohen, John Crimaldi and Diane McKnight.

* 5 with other undergrad Co-Authors listed (Not REU students)

How many research publications in peer reviewed journals did you prepare that built on REU student work to some extent, but the students were not co-authors: # ____ List

a	b	c	d	e	f	g	h	i	j
0	0		0	1 prep	1	0	3	0	0

McKnight, D. M. and S. Duren. 2004. Biogeochemical processes controlling midday ferrous iron maxima in stream waters affected by acid rock drainage. Appl. Geochem. 19: 1075-1084.

Bielefeldt, A.R., T. Illangasekare, and R. LaPlante. 2004. Biodegradation of Propylene Glycol from Aircraft Deicing Fluid in Laboratory Columns under Variable Loading. Accepted for publication in ASCE Journal of Environmental Engineering, Oct. In press. (J. Garcia in acknowledgements)

How many conference presentations or posters did you develop that included REU students as co – authors? #____ List:

a	b	c	d	e	f	g	h	i	j
0	0		0	0	1	1	0	1*	0

* 3 OTHER UG CO-AUTHORS LISTED – NON-REU

Bielefeldt, A.R. and C. Vos*. 2004. Chromium-Contaminated Soil Treatment By In-Situ Stabilization. Water Environment Federation Annual Conference and Exposition. New Orleans, LA. October.

Clarke L.*, Angenent L., Robinson, A., and **Hernandez M**. (2003) Primary Biopolymer Associations with Airborne Particualte Matter, Platform resented at the Annual Conference of the American Association of Aerosol Research, Anaheim, CA, October 2003

Wood A.R., Ryan J.N., *Cholas R., *Harrington L., Isenhart L., and Turner N., 2004. Assessment of zinc, copper, and lead in streams and streambed sediments of the Lefthand Creek watershed, northwestern Boulder County, Colorado. Presented at the *1st Water Environment Federation/American Water Works Association Student Conference, Rocky Mountain Region*, Golden, Colorado, May 18, 2004.

How many conference presentations or posters did you develop that built on REU student work to some extent, but the students were not co-authors: # ____ List

a	b	c	d	e	f	g	h	i	j
2	0		0	0	1	0	3	0	0

Dickenson, E., L.Work, R.S. Summers: "Short-Term Chlorine Decay and Disinfection By-Product Formation," Proc. Amer. Water Works Assoc. Conference, New Orleans, LA (2002).

Dickenson, E., R.S. Summers: "Using Chlorine Exposure (CT) to Predict Trihalomethane Formation," Proc. Amer. Water Works Assoc. Water Quality Technology Conference, Philadelphia, PA (2003).

Bielefeldt, A.R., P.R. Pfeiffer, T. Illangasekare, C. Woodward, and B. Henry. 2004. Vegetable Oil Emplacement for Remediation of Chlorinated Solvent Sites. Remediation of Chlorinated and Recalcitrant Compounds. Battelle. Monterey, CA. May. Poster. [some of J. Warren's work]

How many proposals did you write that built on REU student work (perhaps included their work as preliminary data, etc): # ____

a	b	c	d	e	f	g	h	i	j
1	1		0	1	1	1		1	1

How much contact and what type of contact did you have with your REU students after the 10 weeks in the summer: (list # of your REU students that you had each kind of contact with):

_____No contact

_____Occasional emails (friendly)
_____Talked or emailed with the student to discuss career, graduate school, etc.
_____Wrote recommendation letter for the student for graduate school, scholarship, or a job
_____Involved the student in preparing publications or conference presentations
_____Continued working with the REU student on research (during academic year, subsequent summer, graduate school)

	a	b	c	d	e	f	g	h	i	j
no contact	1	0				2	1	2		
friendly email	4	2	1*		2	2	2	10 ?	8	
career, grad schools	2	2			1	2	1	4	14	x
rec letter	2	2	1*			3	1	4	8	x
publications/present	0	0				1	1		5 ?	
continued work	1	2				0	0		4 3?	x

?: #s listed exceed # REU advised...

Check all of the following statements that you agree with:
_X_"I get a lot of personal satisfaction out of working with undergraduates doing research"
__X_"Involving undergraduates in my research enables me to expand the avenues of investigation that I can pursue"
___"Mentoring undergraduates is viewed favorably in my department's tenure/promotion review process."
__X_"My own positive experiences doing undergraduate research help motivate me to be a mentor"
__X_"My work lends itself well to undergraduate participation"

	a	b	c	d	e	f	g	h	i	j
personal satisfaction	X	X	X	X	X	X	X	X	X	x
expand avenues	X		X	X		X		X	X	x
promotion/tenure		X	X					X		x
positive experiences motivate	X	X	X	X		X	X	X	X	
work lends well	X		X	X				X	X	x

"Research experiences are more valuable for students who will pursue research or teaching careers than for those who will not."
Agree **somewhat agree** disagree somewhat disagree

a	b	c	d	e	f	g	h	i	j
SA	DS	DS	DS	A	DS	SA	D	SA	D

"Research is a good experience for undergraduates, regardless of their decisions about career or advanced degrees."
Agree **somewhat agree** disagree somewhat disagree

a	b	c	d	e	f	g	h	i	j
SA	A	A	A	SA	A	A	A	A	A

Rate each of the following factors on their importance in producing a high-quality research experience:

	a	b	c	d	e	f	g	h	i	j
carefully planned experiments that yield expected results	E	S	S	S	S	S	S	S	S	I
close relationship between research and coursework	I	I	N	N	N	S	N	N	I	I
making the student feel that s/he is an integral part of the project team	E	E	E	E	E	I	I	E	E	E
open and regular communication between mentor and student	E	E	E	E	I	E	I	E	E	E
providing sound technical advice	E	S	E	E	E	E	I	E	E	E
student independence	I	E	E	I	E	E	S	I	I	I
student involvement in project design	I	E	S	N	I	I	S	E	N	S

Factor	Extremely important (E)	Important (I)	Somewhat important (S)	Not important (N)
carefully planned experiments that yield expected results	X			

How satisfied were you with the experiences as a whole?

Very satisfied satisfied somewhat satisfied somewhat dissatisfied dissatisfied

a	b	c	d	e	f	g	h	i	j
satis	very sat	very s	very s	very s	satis	sat	very s	very s	very s

Any suggestions that you would make for a future REU program:

g: Longer than 10 weeks.
More opportunities to meet with REU students in an intellectual (only the final presentations now) and social setting (a quick meeting in the beginning and the BBQ at the end).
More research support from REU program.
Requirement for final report as well as final presentation. Feedback on both – for improvement of communication skills.
Seminar on environmental ethics and policy.

d: More forewarning in order to make the research startup phase more seamless.

f: * also have a written report at the end; serve as a better record of what was done

i: Travel money (registration, per diem, flight) for student to attend conference if their work makes it to a poster or platform presentation.

Note: some questions are the same as those from: SRI International. 2004. Evaluation of NSF support for undergraduate research opportunities. 2003 NSF-Program participant survey. Draft Executive Summary. Arlington, VA.