



**National Center for
Research Resources**



Vermont Genetics Network
IOeA Networks of Biomedical Research Excellence

Layers of Assessment: Vermont INBRE Vermont Genetics Network (VGN)

Internal Steering Committee

External Advisory Committee

AAAS consultants' yearly visit

Logic Model and Output Time line

Annual Surveys of every participant in VGN

Analysis of the survey results by outside evaluator

Longitudinal study 2001-2008, 2003-2011

Longitudinal Study 2001-2008

Table 1: Survey Response Rates

	Undergraduate Students		Graduate Students	Faculty		Total
	Indirectly Funded	Directly Funded		Baccalaureate	UVM	
Surveys distributed	38	79	25	46	27	215
Surveys received	19	45	18	41	26	149
Response rate	50%	57%	72%	89%	96%	69%

General Information

Home Institution at time of VGN Funding:

Home institution	Undergraduate Students				Faculty	
	Indirectly Funded		Directly Funded		Baccalaureate	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Castleton State College	0	0%	1	2%	2	5%
Johnson State College	0	0%	5	11%	2	5%
Middlebury College	8	42%	25	56%	19	46%
Norwich University	6	32%	3	7%	7	17%
Saint Michael's College	5	26%	11	24%	11	27%
Undergraduate Major at time of VGN Funding	Indirect Funding		Direct Funding		Total	
Total	19	100%	45	100%	64	100%
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Molecular biology/Biochemistry	5	26%	10	22%	15	23%
Biology	5	26%	9	20%	14	22%
Biochemistry	3	16%	5	11%	8	13%
Biology & other minors	1	5%	5	11%	6	9%
Chemistry	0	0%	4	9%	4	6%
Mathematics	4	21%	0	0%	4	6%
Neuroscience	0	0%	4	9%	4	6%
Psychology	0	0%	3	7%	3	5%
Wellness & alternative medicine	0	0%	2	4%	2	3%
Biomedical technology	1	5%	0	0%	1	2%
Physics	0	0%	1	2%	1	2%
Environmental studies	0	0%	1	2%	1	2%
Exercise science	0	0%	1	2%	1	2%
Total	19	100%	45	100%	64	100%

Gender of Survey Respondents

Gender	Undergraduate Students		Graduate Students	Faculty		Total	
	Indirectly Funded	Directly Funded		Baccalaureate	UVM	Frequency	Percent
Male	9	23	6	22	20	80	55%
Female	10	22	12	15	6	65	45%
Total	19	45	18	37	26	145	100%

Current Status of Survey Participants

Currently Live in Vermont	Undergraduate Students		Graduate Students	Faculty		Total	
	Indirectly Funded	Directly Funded		Baccalaureate	UVM	Frequency	Percent
Yes	4	18	12	38	23	95	64%
No	15	27	6	3	3	54	36%
Total	19	45	18	41	26	149	100%

Undergraduates in Research



Former Undergraduate VGN Recipients' Current Educational Status

Current Educational Status	Indirect Funding		Direct Funding	
	Frequency	Percent	Frequency	Percent
Undergraduate at same college	3	16%	13	29%
Graduate program	2	11%	12	27%
Medical School	2	11%	7	16%
Professional training	2	11%	5	11%
Employed but not in school	9	47%	6	13%
Other	1	5%	2	4%
Total	19	100%	45	100%

Former Undergraduate VGN Recipients Current Involvement in Research

Current involvement in science/health research	Indirect Funding		Direct Funding	
	Frequency	Percent	Frequency	Percent
Pursuing own research	2	11%	24	53%
Research assistant	6	32%	5	11%
Not conducting research	10	53%	13	29%
Other	1	5%	3	7%
Total	19	100%	45	100%

85% of undergraduates expect to pursue a career in Science

When asked what type of science career:

Type of science career	Indirect Funding		Direct Funding	
	Frequency	Percent	Frequency	Percent
Research institute	3	20%	7	18%
University professor	1	7%	6	15%
Engineer	0	0%	1	3%
Physician who does research	4	27%	13	33%
Other	7	47%	13	33%
Total	15	100%	40	100%

“Other” included cancer research, lab technician, dental school, medical school and public health veterinarian, dentistry, forensic chemist, industrial neuroscience, international public health, educator, physician assistant and psychologists who carry out research.

Graduate Students



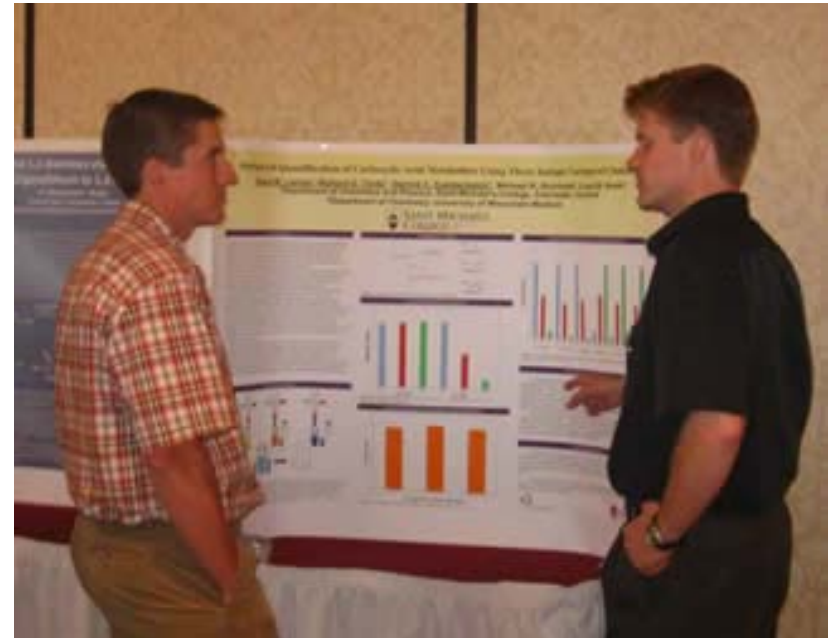
VGN Graduate Students' Involvement in Science and Biomedical Research

Current Involvement in research	Graduated		Not yet graduated		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Pursuing own research	4	50%	9	90%	13	72%
Research as part of employment	1	13%	0	0%	1	6%
Research assistant	1	13%	1	10%	2	11%
Not involved in research	2	25%	0	0%	2	11%
Total	8	100%	10	100%	18	100%

Career goals of Recipients of VGN Graduate Student Support	Frequency	Percent
University professor w/ tenure	4	22%
Researcher	4	22%
Industrial scientist	7	39%
Other*	3	17%
Total	18	100%

Other included veterinarian, science communication and science policy.

FACULTY RESEARCH and CAREER DEVELOPMENT



VGN Funded Faculty Current Employment Status

Current Employment Status	Baccalaureate		UVM	
	Frequency	Percent	Frequency	Percent
No change in status	24	59%	15	58%
Received tenure	9	22%	6	23%
Received promotion	4	10%	3	12%
New institution, same status	1	2%	0	0%
New institution, new status	2	5%	2	8%
No longer faculty	1	2%	0	0%
Total	41	100%	26	100%

VGN Funded Faculty Involvement in Science and Health Research

Involved in science/health research	Baccalaureate		UVM	
	Frequency	Percent	Frequency	Percent
Continued VGN funded research	28	68%	22	85%
New research not same as VGN funded	10	24%	4	15%
Non-science/health research	1	2%	0	0%
Not involved in research	2	5%	0	0%
Total	41	100%	26	100%

Faculty Professional Accomplishments since Receiving VGN Funding

Professional Accomplishments	Baccalaureate		UVM	
	Frequency	Percent	Frequency	Percent
Professional publications	31	76%	24	92%
Presentations at professional meetings	36	88%	25	96%
Collaborative research projects	28	68%	17	65%
Applications for research grants	34	83%	23	88%
Awards of research grant funds	23	56%	19	73%
Other	10	24%	3	12%

VGN IMPACTS



Undergraduate VGN Recipients Report VGN Influence on Educational Goals

VGN influence on graduate or professional educational goals	Indirect Funding		Direct Funding	
	Frequency	Percent	Frequency	Percent
Significantly increased interest	9	47%	15	33%
Somewhat increased interest	5	26%	19	42%
Neither increased or decreased interest	4	21%	11	24%
Somewhat decreased interest	1	5%	0	0%
Total	19	100%	45	100%

Undergraduate VGN Recipients Report VGN Influence on Science Career

VGN influence on pursuing science career	Indirect Funding		Direct Funding	
	Frequency	Percent	Frequency	Percent
Significantly increased interest	6	33%	14	31%
Somewhat increased interest	3	17%	23	51%
Neither increased or decreased interest	9	50%	8	18%
Somewhat decreased interest	0	0	0	0
Total	18	100%	45	100%

Impacts on Undergraduates

74% report increased interest in graduate or professional goals

73% report increased interest in pursuing science careers

50% and **82%** report increased interest among the students funded on Projects and on their own VGN awards respectively

85% expect to pursue careers in science (**84%** and **89%**)

Overall, the undergraduate students were extremely grateful for the opportunity to conduct VGN funded research

Impacts on Graduate Students

72% reported that VGN increased their interest in pursuing a career in science.

VGN influenced their research questions (**72%**) and choice of research methods (**78%**).

About one-quarter of graduate students reported that VGN did not influence their career goals (**28%**); research questions (**28%**) or research questions (**22%**).

VGN's other impacts most frequently cited were improved networking skills and increased networking opportunities (**16%**).

Impacts of VGN on Faculty Research and Career Goals

VGN contribute to achievement of professional goals	Baccalaureate		UVM	
	Frequency	Percent	Frequency	Percent
Significantly increased ability to achieve goals	25	61%	15	58%
Somewhat increased ability to achieve goals	15	37%	11	42%
Neither increased nor decreased ability to achieve goals	1	2%	0	0%
Total	41	100%	26	100%

VGN influence research questions	Baccalaureate		UVM	
	Frequency	Percent	Frequency	Percent
Significantly influenced choice	11	28%	5	19%
Somewhat influenced choice	15	38%	6	23%
No influence on choice	14	35%	15	58%
Total	40	100%	26	100%

VGN influence research methods	Baccalaureate		UVM	
	Frequency	Percent	Frequency	Percent
Significantly influenced choice	13	33%	8	31%
Somewhat influenced choice	11	28%	6	23%
No influence on choice	16	40%	12	46%
Total	40	100%	26	100%



Other Impacts on Baccalaureate Faculty

99% of faculty report that the VGN funding increased their ability to attain professional goals

66% report that VGN influenced their choice of research questions

61% report that VGN influenced their choice of methods

40% faculty report that the VGN funding helped to secure extramural funding

22% said they had developed new curriculum as a result of VGN

Other Impacts on UVM Faculty

100% of faculty report that the VGN funding increased their ability to attain professional goals

42% report that VGN influenced their choice of research questions

54% report that VGN influenced their choice of methods

60% faculty report that the VGN funding helped to secure extramural funding

1 faculty member had developed new curriculum as a result of VGN

29% report additional networking opportunities including collaborations within UVM and knowledge about research in institutions beyond UVM.

Open Ended Faculty Comments:

From Baccalaureate Faculty:

I am convinced that I only received my NSF grant because VGN funds allowed me to build the preliminary data needed to be competitive.

My NIH AREA grant came directly out of my VGN funded research

My university offers many small grants and release time opportunities that were more accessible due to the VGN funding. Collaboration with (another institution) has led to NIMH funding as well.

Preliminary findings obtained with VGN funding strengthened my application for a federal research grant

The seed money from VGN allowed me to receive money internally from the faculty development program.

Workshops have been incredibly helpful. Professional accomplishments and travel for collaborations supported by VGN greatly strengthened external grant proposals.

From UVM Faculty:

Because of VGN resources I have been able to secure additional funding from the CF Foundation and the NIH.

I have received undergraduate assistantships from UVM for students in my lab that were directly related to VGN instrumentation access (proteomics facility).

It allowed my graduate students to focus on research This had a direct impact on their productivity and this played a factor on our ability to secure extramural funds.

Microarray data was key to my renewal of NIH R01 grant

VGN funding of my graduate student led to a key publication that helped us get an R01.

From the Report Summary:

Faculty credit VGN with providing invaluable experience conducting research and impacting on career choices.

Former graduate student recipients said VGN increased their interest in pursuing a career in science as well as influencing their choice of research questions and methods.

VGN funding has yielded important benefits; increasing students' interest in pursuing careers in science and supporting professional accomplishments of sciences in both university and baccalaureate institutions.

Most respondents reported that participation in VGN had an important influence on their pursuit of science. Undergraduate recipients generally reported an increased interest in pursuing graduate or professional education and science career goals



Room for Improvement:

Faculty want more funding and less reporting

Graduate students want more funding and less reporting