



# PROGRAM REVIEW

A PROCESS FOR  
SELF-EVALUATION  
AND  
CONTINUOUS IMPROVEMENT

DIAGNOSTIC MEDICAL SONOGRAPHY

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## DESCRIPTION OF PROGRAM REVIEW

Bergen Community College strives to be a dynamic learning community that supports collaboration, diversity, and student success through quality programs and enthusiastic teaching, learning, and serving. The program review process is designed to ensure excellent educational programs that address student and community needs. It will be helpful to focus on where the program is now from a variety of perspectives, where do we want the program to be, and how and when does the program reach that point.

The purpose for program review is to:

- Provide quality programs through peer review and self-evaluation
- Encourage systematic collection and review of student learning assessments and effectiveness measures
- Ensure that the program meets its stated mission and addresses the strategic directions of the college
- Recognize and celebrate achievements and successes
- Identify and address concerns and difficulties
- Address and fulfill accreditation requirements

Elements of the process include:

- Faculty leadership
- Flexibility in defining areas to be assessed
- Support provided by Office of Institutional Research
- Recommendations based on quantitative and qualitative data
- A continuous improvement cycle whereby the recommendations and action plan for one cycle are addressed in the next cycle
- Sharing and communication of the program review summary and action plan with others at the college

A program review team should consist of an appropriate combination of the following members:

- A Team Chair, typically the department chair or a faculty member appointed by the Divisional Dean in consultation with the Vice President of Academic Affairs
- The program director/coordinator, if applicable
- Designated faculty and staff from the area, appointed by the Team Chair in consultation with the Divisional Dean
- Adjunct faculty and/or part-time staff as appropriate, appointed by the Team Chair in consultation with the Divisional Dean
- Staff from other areas as appropriate, appointed by the Team Chair in consultation with the Divisional Dean
- A faculty member from another division, as appropriate, chosen by the Team Chair in consultation with the Divisional Dean
- The Divisional Dean
- External Reviewer selected by the Divisional Dean based on recommendations from the Team Chair

- Vice President of Institutional Research, ex officio
- Vice President of Academic Affairs, ex officio

Examples of programs are:

- A group of courses that result in a certificate or degree (e.g. A.S., A.A., A.F.A., A.A.S., CERT, C.O.A.)
- Transfer programs, as well as sequences of courses taken for transfer to the university (e.g. EBS or Developmental Math sequence, business transfer courses)
- Individual courses or a sequence of courses or combinations of courses (e.g. communication courses, college math sequence, performing arts program)
- Special programs (Honors, Service Learning, Library, Counseling)
- Others

The process will involve the following steps:

- Identify the Team Chair and team members for program review
- Hold a team meeting to review purpose, process and end product
- Collect qualitative and quantitative data and other pertinent documents
- Review the data, reflecting on the purposes for program review
- Complete the program review form
- Present summary of program review data and conclusions at a public forum

Timeframes for program review will be:

- Every five years for most programs
- More often for programs where specific issues have been identified and where interim reporting may be necessary

A suggested timeline for a specific program’s review is provided below. The Team Chair may modify the number of meetings according to the needs of the program.

Identify programs to review for the next academic year  
and identify team chairs by ..... September  
Orientation for team chairs..... October  
First team meeting to focus on process by ..... 2<sup>nd</sup> week in November  
Second team meeting to review standard data sets by ..... 2<sup>nd</sup> week in December  
Third team meeting to review data from other sources  
and determine if more data is needed by ..... 2<sup>nd</sup> week in February  
Fourth team meeting to formulate recommendations and  
begin writing results by .....2<sup>nd</sup> week in March  
Fifth team meeting to prepare draft by ..... 2<sup>nd</sup> week in April  
Final report completed by ..... 4<sup>th</sup> week in May  
Presentation to division in..... Fall 2014 Semester  
Presentation at a public forum in ..... Fall 2014 Semester

Template for Program Review  
Bergen Community College

**PROGRAM:** \_\_\_\_\_ Diagnostic Medical Sonography \_\_\_\_\_

**PROGRAM REVIEW TEAM:** \_\_\_\_\_ Geralyn Collins Eisler \_\_\_\_\_

**DATE OF THIS REPORT:** \_\_\_\_\_ April 26, 2017 \_\_\_\_\_

**PERIOD OF YEARS BEING REVIEWED:** \_\_\_\_\_ 2011-2014 \_\_\_\_\_

### OVERVIEW

State the mission of the program, describe program goals and objectives, and describe the relationship to overall college mission and goals ...

The mission of the Diagnostic Medical Sonography program is to help students foster and develop skills which will enable them to work in close association with radiologists and physicians to provide quality images to aid in diagnostic interpretation. The knowledge and practice of clinical skills and recognizing the disease –state qualifies him/her to become a respected member of his/her peers. These abilities are attained by a correlation of theoretical instruction and clinical experience. The instructors will work closely with the students in both the didactic and clinical phases of the program to develop their personal and vocational abilities. They will also attempt to provide a climate that will stimulate the student in the development of concepts and skills enabling him/her to become a competent sonographer and a productive member of the Sonography team. This closely aligns with the mission of Bergen Community College as graduates of the program will by virtue of their degree, registries and skills be ready to embrace opportunities for educational, professional and personal growth.

### SUMMARY OF SIGNIFICANT DEVELOPMENTS SINCE LAST PROGRAM REVIEW

Provide a brief summary of significant developments since the last program review, with particular emphasis on challenges identified by the previous team, accomplishments relating to the action plans, any work yet to be done...

A challenge identified was improving student attrition rates. As a result of attrition rates, an action plan was implemented that utilized the HESI test as an entrance examination for the students starting in the fall of 2011. It was anticipated that this objective method of selection should have a positive impact on the attrition of the program since the top scorers on the entrance exam will be admitted to the program. Due to the small class size of the DMS program, improving attrition rates is innately challenging. The program accepts a maximum of 15 students per year due to the nature of our clinical rotations.

The attrition rate for the class of 2013 was 27%, which was higher than acceptable. Four students dropped out due to personal reasons. An action plan was implemented that included a mandatory new student orientation in June at which faculty stressed to the new students the necessity of realistic goals regarding time management, study skills, and expectations about the intensity of the program content. The attrition rate for the class of 2014 was again 27% and an action plan was implemented that invited current students to the new student orientation to share their personal experiences and the sacrifices necessary to be successful in the program. The attrition rate for the class of 2015 was 31%. Two students failed and three dropped out. One of

the three that left dropped out for a career change and two left for personal reasons. As per the newest Action Plan (2015), during the Health Professions Information Sessions that are held for prospective students; program expectations; specifically, time, intensity and study expectations will be outlined. Additionally, a semester by semester breakdown will be reviewed so students can preplan for the anticipated rigors of the program.

## FOCUS ON STUDENTS

Reflect on the degree to which the program is meeting student needs. Comment on each of the following categories. Some considerations are given after each category—**please comment on only those which are applicable to this program.**

### Demographics

[Analysis or examination of the demographics of the students enrolled, special populations being served or not being served, trends and patterns of enrollment, comparisons to other Maricopa Colleges and national trends, ...]

## Diagnostic Medical Sonography – AAS.HP.DMS, AAS.AH.DMS

### Enrollment by Race/Ethnicity, Age and Gender, Fall 2011 – Fall 2016

Race/Ethnicity	Fall 2011		Fall 2012		Fall 2013		Fall 2014		Fall 2015		Fall 2016	
	#	%	#	%	#	%	#	%	#	%	#	%
Am. Indian/Alaska Native	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Asian	5	15.6%	2	7.7%	3	10.3%	2	7.1%	2	7.1%	2	6.7%
Black/African American	2	6.3%	0	0.0%	0	0.0%	1	3.6%	0	0.0%	1	3.3%
Hawaiian/Pacific Islander	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Hispanic, all races	3	9.4%	3	11.5%	5	17.2%	4	14.3%	4	14.3%	6	20.0%
Two or more races	0	0.0%	1	3.8%	1	3.4%	1	3.6%	1	3.6%	0	0.0%
White	20	62.5%	15	57.7%	12	41.4%	15	53.6%	15	53.6%	14	46.7%
<b>Total Known Race</b>	<b>30</b>	<b>93.8%</b>	<b>21</b>	<b>80.8%</b>	<b>21</b>	<b>72.4%</b>	<b>23</b>	<b>82.1%</b>	<b>22</b>	<b>78.6%</b>	<b>23</b>	<b>76.7%</b>
Non-Resident Alien	0	0.0%	1	3.8%	1	3.4%	1	3.6%	1	3.6%	1	3.3%
Unknown	2	6.3%	4	15.4%	7	24.1%	4	14.3%	5	17.9%	6	20.0%
<b>Total Enrollment</b>	<b>32</b>	<b>100.0%</b>	<b>26</b>	<b>100.0%</b>	<b>29</b>	<b>100.0%</b>	<b>28</b>	<b>100.0%</b>	<b>28</b>	<b>100.0%</b>	<b>30</b>	<b>100.0%</b>

Age Range	Fall 2011		Fall 2012		Fall 2013		Fall 2014		Fall 2015		Fall 2016	
	#	%	#	%	#	%	#	%	#	%	#	%
Under 18 years old		0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
18 to 21 years old		6.3%	3	11.5%	3	10.3%	9	32.1%	6	21.4%	7	23.3%
22 to 24 years old		9.4%	3	11.5%	5	17.2%	3	10.7%	5	17.9%	6	20.0%
25 to 34 years old		21.9%	9	34.6%	11	37.9%	12	42.9%	12	42.9%	12	40.0%
35 years and older	2	62.5%	11	42.3%	10	34.5%	4	14.3%	5	17.9%	5	16.7%
Unknown		0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
<b>Total Enrollment</b>	<b>3</b>	<b>100.0%</b>	<b>26</b>	<b>100.0%</b>	<b>29</b>	<b>100.0%</b>	<b>28</b>	<b>100.0%</b>	<b>28</b>	<b>100.0%</b>	<b>30</b>	<b>100.0%</b>

Gender	Fall 2011		Fall 2012		Fall 2013		Fall 2014		Fall 2015		Fall 2016	
	#	%	#	%	#	%	#	%	#	%	#	%
Male	3	9.4%	4	15.4%	3	10.3%	1	3.6%	3	10.7%	3	10.0%
Female	29	90.6%	22	84.6%	26	89.7%	27	96.4%	25	89.3%	27	90.0%
Unknown	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
<b>Total Enrollment</b>	<b>32</b>	<b>100.0%</b>	<b>26</b>	<b>100.0%</b>	<b>29</b>	<b>100.0%</b>	<b>28</b>	<b>100.0%</b>	<b>28</b>	<b>100.0%</b>	<b>30</b>	<b>100.0%</b>

-The most notable trend in the Diagnostic Medical Sonography Program's Demographics is the decrease in the white student population from 62.5% in 2011 to 46.7% in 2016. The Hispanic population has increased during this period from 9.4% in 2011 to 20.0% in 2016.

-A significant trend in student's age is an increase in the 25 to 34 year age group from 21.9% in 2011 to 40.0% in 2016. This trend was accompanied by a decrease in the 35 year and older group from 62.5% in 2011 down to 16.7% in 2016.

-The Diagnostic Medical Sonography Program continues to be a female dominated program with the female component being > 84% for the time span 2011-2016.

-Many of our students have some college credits or hold prior degrees.

-Many of our students live outside Bergen County with some of them living in New York.

-We accept 15-16 students per year. We receive approximately 160 applicants per year with roughly 60 being eligible to sit for the HESI test.

## Student Satisfaction

[Student surveys of enrollees, transfer students and/or graduates (program-specific or institution-level), qualitative measures for example focus groups or interviews ...]

The Center for Institutional Effectiveness at Bergen Community College conducts an annual Graduate Follow-up Survey of graduates one year after they have completed the Diagnostic Medical Sonography Program to assess the extent to which students feel the College's programs, facilities and services have enabled them to achieve their personal, educational and professional goals. The following information relates to the students who received degrees and certificates between 2012 and 2014.

### Number of Total Respondents

2012	2013	2014
3	5	1

### Have you enrolled at another college in a degree granting program since your graduation from BCC?

	2012		2013		2014	
	Freq.	%	Freq.	%	Freq.	%
Yes	0	0.0%	1	20.0%	1	100.0
No	3	100.0%	4	80.0%	0	0.0%

The Joint Review Committee requires the use of a graduate survey as a component of the programs ongoing self-assessment. The graduate surveys are sent to the students six months' post-graduation.

2012 -10 surveys returned	Rating	5	4	3	2	1	N
<b>I. KNOWLEDGE BASE (Cognitive Domain)</b> <b>THE PROGRAM:</b>							
A.Helped me acquire the sonography care knowledge necessary to function in a healthcare setting.							
	<b>Count</b>	10					
B.Helped me acquire the general medical knowledge base necessary to function in a healthcare setting.							
	<b>Count</b>	10					
C.Prepared me to collect data from charts and patients.							
	<b>Count</b>	9	1				
D.Prepared me to interpret patient data.							
	<b>Count</b>	10					
E. Prepared me to evaluate diagnostic findings in order to perform appropriate diagnostic procedures.							
	<b>Count</b>	10					
F.Trained me to use sound judgment while functioning in a healthcare setting.							
	<b>Count</b>	10					
<b>II. CLINICAL PROFICIENCY (Psychomotor Domain)THE PROGRAM:</b>							
A.Prepared me to perform a broad range of sonography examinations in the following specialty in which I trained (circle only those that apply).							
General							
	<b>Count</b>	10					
Cardiac							
	<b>Count</b>	10					
Vascular							
	<b>Count</b>	9	1				
B.Prepared me with the skills to perform patient assessment							
	<b>Count</b>	10					
C. Prepared me to perform up-to-date sonography procedures.							
	<b>Count</b>	9	1				
D.Prepared me to perform and interpret diagnostic procedures							
	<b>Count</b>	10					

<b>III. BEHAVIORAL SKILLS (Affective Domain)</b> <b>THE PROGRAM:</b>							
A.Prepared me to communicate effectively within a healthcare setting.							
	<b>Count</b>	10					
B.Prepared me to conduct myself in an ethical and professional manner.							
	<b>Count</b>	10					
C.Prepared me to manage my time efficiently while functioning in a healthcare setting							
	<b>Count</b>	9	1				

2013 -11 surveys returned	Rating	5	4	3	2	1	N
<b>I. KNOWLEDGE BASE (Cognitive Domain)</b> <b>THE PROGRAM:</b>							
A.Helped me acquire the sonography care knowledge necessary to function in a healthcare setting.							
	<b>Count</b>	9	2				
B.Helped me acquire the general medical knowledge base necessary to function in a healthcare setting.							
	<b>Count</b>	9	2				
C.Prepared me to collect data from charts and patients.							
	<b>Count</b>	7	3		1		
D.Prepared me to interpret patient data.							
	<b>Count</b>	6	4		1		
E. Prepared me to evaluate diagnostic findings in order to perform appropriate diagnostic procedures.							
	<b>Count</b>	8	3				
F.Trained me to use sound judgment while functioning in a healthcare setting.							
	<b>Count</b>	9	2				
<b>II. CLINICAL PROFICIENCY (Psychomotor Domain)THE PROGRAM:</b>							
A.Prepared me to perform a broad range of sonography examinations in the following specialty in which I trained (circle only those that apply).	Rating	5	4	3	2	1	N
General							
	<b>Count</b>	7	4				
Cardiac							
	<b>Count</b>	7	4				
Vascular							
	<b>Count</b>	7	4				
B.Prepared me with the skills to perform patient assessment							
	<b>Count</b>	8	2	1			
C. Prepared me to perform up-to-date sonography procedures.							
	<b>Count</b>	7	4				
D.Prepared me to perform and interpret diagnostic procedures							

	<b>Count</b>	8	3				
<b>III. BEHAVIORAL SKILLS (Affective Domain)</b> <b>THE PROGRAM:</b>							
A.Prepared me to communicate effectively within a healthcare setting.							
	<b>Count</b>	9	2				
B.Prepared me to conduct myself in an ethical and professional manner.							
	<b>Count</b>	10	1				
C.Prepared me to manage my time efficiently while functioning in a healthcare setting							
	<b>Count</b>	8	2	1			

2014 -9 surveys returned	Rating	5	4	3	2	1	N
<b>I. KNOWLEDGE BASE (Cognitive Domain)</b> <b>THE PROGRAM:</b>							
A.Helped me acquire the sonography care knowledge necessary to function in a healthcare setting.							
	<b>Count</b>	8	1				
B.Helped me acquire the general medical knowledge base necessary to function in a healthcare setting.							
	<b>Count</b>	8	1				
C.Prepared me to collect data from charts and patients.							
	<b>Count</b>	7	2				
D.Prepared me to interpret patient data.							
	<b>Count</b>	7	2				
E. Prepared me to evaluate diagnostic findings in order to perform appropriate diagnostic procedures.							
	<b>Count</b>	8	1				
F.Trained me to use sound judgment while functioning in a healthcare setting.							
	<b>Count</b>	8	1				
<b>II. CLINICAL PROFICIENCY (Psychomotor Domain)THE PROGRAM:</b>							
A.Prepared me to perform a broad range of sonography examinations in the following specialty in which I trained (circle only those that apply).	Rating	5	4	3	2	1	N
General							
	<b>Count</b>	8	1				
Cardiac							
	<b>Count</b>	7	2				
Vascular							
	<b>Count</b>	7	2				
B.Prepared me with the skills to perform patient assessment							
	<b>Count</b>	8	1				
C. Prepared me to perform up-to-date sonography procedures.							
	<b>Count</b>	8	1				

D.Prepared me to perform and interpret diagnostic procedures							
	<b>Count</b>	8	1				
<b>III. BEHAVIORAL SKILLS (Affective Domain)</b> <b>THE PROGRAM:</b>							
A.Prepared me to communicate effectively within a healthcare setting.							
	<b>Count</b>	8	1				
B.Prepared me to conduct myself in an ethical and professional manner.							
	<b>Count</b>	8	1				
C.Prepared me to manage my time efficiently while functioning in a healthcare setting							
	<b>Count</b>	8	1				

### Various comments from students

2012-Additional lab/scanning allowance for those graduates who have not yet obtained employment would be ideal. It would help maintain and possibly improve the skills obtained during the class time and clinical rotations.

2013-Please provide new or up to date machines, cardiac packages are lacking and more phantoms are needed. Strengths include the enthusiasm of the professors for the material they teach.

2014-Needs include adding another semester of vascular and more focus on small part exams. As an entry level sonographer, I felt confident regarding my knowledge and skills.

### Comments

Student feedback is predominantly positive with most items earning a score of 5 or 4. In 2013 one respondent gave a score of 2 to two skills; 1-prepared me to collect data from charts and patients and 2- prepared me to interpret patient data. While one respondent out of 11 is not statistically significant, these skills are assessed in clinical and our adjuncts must be consistent. These points will be addressed at the next adjunct conference. Adjuncts will be instructed that these topics are a teaching opportunity that we must reliably address with students in the hospital setting.

### Learning Outcomes Assessments

[Documented outcomes, degree of faculty participation in regular assessment activities, results of assessments, what has been learned from assessments, what has changed as a result of assessments, what plans are there for changes in the future, are there appropriate feedback loops to improve student learning, ...] Please fill out the chart below and include copies of recent assessment reports.

Program Learning Outcomes (include all program outcomes that are listed in the Academic Catalog )	Describe how the outcome has been directly assessed in the last five year period.	What have been the results of that assessment? What changes have been made as a result?
Demonstrate the ability to efficiently perform basic abdominal and small parts, pelvic, obstetrical, and cardiac	Student competency exams are graded in lab and clinical	One student has failed a didactic lab competency and

ultrasound examinations at an acceptable level of competence.	by Bergen Community College clinical and lab faculty	did not earn the combined academic and competency grade of 75 to move on. The student is retaking the first semester courses at present.
Correlate ultrasound images with clinical findings, patient history, and pertinent pathophysiology.	Students are assessed by quizzes, tests and film pathology exams.	Students must earn a cumulative grade of 75 to pass. Four have failed in this time period.
Possess the knowledge, skills and abilities of the student sonographer in caring for the ill patient	Students must pass DMS 102 Patient Care in the first semester where they learn the fundamentals.	All students have passed,
Demonstrate the ability to promote good interpersonal relations with members of the health team	Students are evaluated four time during each clinical rotation on a professional growth form which assesses this ability.	All students have passed.
Possess a medical and professional sense of values and a concern for public health and safety.	This is assessed in DMS 102 Patient Care and the students and by the student's participation in Community Health Week which will be expanded this year to include service learning.	All students have passed DMS 102 and the DMS students have shown strong support for the Celebration of Life Walk. Service Learning is to be added Spring 2017
Have an awareness of the responsibilities and limitations of the role of the sonographer and to be able to function within these limits	Students are evaluated four time during each clinical rotation on a professional growth form which assesses this ability.	All students have passed
Understand the importance of continued personal and educational growth	Students are encouraged to join the professional organization SDMS and will be joining Sono-World as part of Advanced Practice beginning Spring 2017	Many students are members of the SDMS before seeking employment. Students in DMS 228 Advanced Practice will be required to join Sono-World.
Recognize and appreciate the cost, preparation, maintenance and care of sophisticated instrumentation found within the ultrasound department.	Students are evaluated four time during each clinical rotation on a professional growth form which assesses this ability. Additionally, students are being assigned a scan station leader in each lab session to ensure care of ultrasound equipment and each lab station	All students have passed. Students assess the cleanliness of the lab stations and ultrasound machines before leaving lab sessions.

Be prepared to successfully complete the registry examinations offered by the American Registry of Diagnostic Medical Sonographers (ARDMS) in the areas of Abdominal, Ob/Gyn, and Adult Echocardiography.	A recent change is that students are eligible to complete registry exams in the areas of Abdominal, Ob/Gyn, and Adult Echocardiography sixty days before graduation.	(54%) students from the Class of 2015 took registry exams before graduating.

### Student Success

[Retention and completion rates, placement data, comparison to other colleges in New Jersey and national trends, transfer rates and/or transfer success, graduates' perspectives, employers' perspectives, degree to which students succeed at next educational level, degree to which diverse populations succeed,]

Diagnostic Medical Sonography (AAS.HP.DMS, AAS.AH.DMS) Graduates' Answers to Main Graduate Follow-Up Survey

2012	2013	2014
3	5	1

**Table 2: Have you enrolled at another college in a degree granting program since your graduation from BCC?**

	2012		2013		2014	
	Freq.	%	Freq.	%	Freq.	%
Yes	0	0.0%	1	20.0%	1	100.0%
No	3	100.0%	4	80.0%	0	0.0%
Less than 32	-	-	0	0.0%	0	0.0%
33 - 63	-	-	0	0.0%	1	100.0%

Only one student from the three years polled went on to further education. All of the credits earned at Bergen Community College were accepted at the transfer institute. Students reported that they felt prepared for further education.

Each year the DMS program complies data for the JRC regarding retention, completion, employment and credential success rate.

Year	2012	2013	2014
Attrition Rate	17 admits/17 graduates=0%	15 admits/11 graduates=27%	15 admits/11 graduates=27%
Employment Rate	17 graduates/14 employed=82%	11 graduates/5 employed=45%	11 graduates/8 employed 73%

Credential Success -registry credentials earned, all pass rates 100% unless indicated				
Year	Number of graduates	Abdomen RDMS	OB/GYN RDMS	Echo RDCS
2012	17	3	9	7
2013	11	5 (83% pass rate)	3	1
2014	11	8	7	4

			PASS RATE			
Program	Attrition	Graduates	RDMS Abdomen	RDMS OB/GYN	RDCS ECHO	EMPLOYMENT RATE
BERGEN COMMUNITY COLLEGE 2012	0%	17	100%	100%	100%	82%
Rowan College at Burlington 2012	Data not available					
Rowan College at Gloucester 2012	29%	10	67%	78%	N/A	90%
BERGEN COMMUNITY COLLEGE 2013	27%	11	83%	100%	100%	45%
Rowan College at Burlington 2013	43%	4	50%	100%	N/A	50%
Rowan College at	14%	12	92%	80%		83%

Gloucester 2013						
BERGEN COMMUNITY COLLEGE 2014	27%	11	100%	100%	100%	73%
Rowan College at Burlington 2014	0%	9	57%	67%	N/A	67%
Rowan College at Gloucester 2014	38%	8	75%	805	N/A	75%

Bergen Community College is accredited in Abdomen, OB/GYN and Echo. We teach one semester of vascular but are not accredited in vascular. Rowan College at Gloucester is also accredited in vascular, but neither college offers echocardiography. Bergen Community is unique in the fact that at an Associate Degree level students are eligible to become credentialed in abdomen, OB/GYN and echo. After earning one of the prior registries and having a CV form completed by a sonographer with vascular credentials, our graduates can sit for the vascular registry and earn the RVT credential. Rutgers offers all four specialties but the students must enroll in a tract and choose between echo and general. Bergen graduates have the advantage of earning multiple registries and therefore being more marketable in the work force.

#### Employer Surveys

The Joint Review Committee requires the Diagnostic Medical Sonography program to survey employers within a year of graduation. Most employees report that Bergen graduates are well prepared and all report that they would hire another graduate again.

The survey inquiry includes;

#### **Knowledge Base (Cognitive Domain)**

The graduate:

- A. Has the sonography knowledge necessary to function in a healthcare setting
- B. Has the general medical knowledge necessary to function in a healthcare setting
- C. Is able to collect data from charts and patients
- D. Is able to interpret patient data
- E. Is able to recommend appropriate diagnostic and therapeutic procedures

#### **Clinical Proficiency (Psychomotor Domain)**

The Graduate:

#### **Behavioral Skills (Affective Domain)**

The Graduate:

- A. Communicates effectively within a healthcare setting
- B. Conducts himself / herself in an ethical and professional manner
- C. Functions effectively as a member of the healthcare team
- D. Accepts supervision and works effectively with supervisory personnel

#### **Overall Rating**

Please rate and comment on the overall quality of this program's graduate

**Additional Comments**

What qualities or skills (if any) did you expect of the graduate upon employment that he/she did not possess? What are strengths of the graduate(s) of this program?

Please provide comments and suggestions that would help this program to better prepare future graduates.

If given the opportunity, would you hire another graduate from this program?

Bergen Community College Diagnostic Medical Sonography graduates are well regarded in the field. Many of our graduates continue to find employment at their clinical sites. Majority of the graduates from the 2012-2015 went on to work in the field of General or OB/GYN.

Due to the size and structure of the DMS program trends are readily apparent; for example, the decrease in the number of students earning the Echo credential.

**Data Needs**

What additional data that is currently not available would have been helpful to effectively evaluate this area of the program?

No additional data is necessary at this time.

**FOCUS ON FACULTY AND STAFF**

Reflect on the faculty and staff in the program and the degree to which their needs are met, in order for them to in turn be successful with students. Comment on each of the following categories. Some considerations are given after each category—**please comment on only those which are applicable to this program.**

**Demographics**

[Demographics of faculty and staff, full-time and part-time, faculty, technicians, support positions ...]

The Diagnostic Medical Sonography Program is staffed

Name	Title	Degree	Credential	Part Time/ Full Time	Date of Appointment
Geralyn Collins-Eisler	Program Director Didactic/Lab/Clinical Faculty	BSN AAS	RN, RDMS (AB,OB/GYN), RDCS,RVT	FT	2014
Christine Henkel	Didactic/Lab/Clinical Faculty	AAS MS	RDMS (AB,OB/GYN)	FT	1991 PT 1995 FT
Jaclyn Rose	Clinical Coordinator Didactic/Lab/Clinical Faculty	BS AAS	RDMS (AB,OB/GYN), RDCS,RVT	PT	2014

Rose Marie Loffredo	Didactic/Lab/Clinical Faculty	AAS	RDMS (AB) RDCS	PT	2002
Nadia Assis	Didactic/Lab/Clinical Faculty	AAS	RDMS (AB, OB/GYN)	PT	2010
Jorge Alvarez	Lab/Clinical Faculty	BS	RVS	PT	2016
Melissa Benkovic	Laboratory/Clinical Faculty	AAS	RDMS (AB, OB/GYN)	PT	2015
Dorothy Celauro	Laboratory/Clinical Faculty	BS MS	ARRT	PT	2002 radiography 2017 DMS
Glenna Enriquez	Laboratory/Clinical Faculty	AAS	RCS	PT	2015
Susan Herbert	Laboratory/Clinical Faculty	AAS	RDMS (AB, OB/GYN), RVT	PT	2005
Diana Kekhman	Laboratory/Clinical Faculty	AAS	RDMS (OB/GYN), RVT	PT	2015
Maria McGovern	Laboratory/Clinical Faculty	AAS	RDCS (AE)	PT	2012
Gail Mullen	Laboratory/Clinical Faculty	AAS	RVT, RCS	PT	2012
Urvashi Paghdal	Laboratory/Clinical Faculty	BS AAS	RDMS (AB, BR)	PT	2017
Susan Price	Laboratory/Clinical Faculty	BA MS	RDMS (AB, OB/GYN, BR)	PT	2001
Parinaz Rahwar	Laboratory/Clinical Faculty	AAS	RDMS (AB, OB/GYN)	PT	1999
Michele Roe-Devita	Clinical Faculty	AAS	RDMS (AB, OB/GYN), RCS	PT	2009
Ellen Solinas	Laboratory/Clinical Faculty	AAS	RDMS (AB, OB/GYN)	PT	1997
Donna Song	Laboratory/Clinical Faculty	BS	RVT	PT	2016
Elizabeth Valle	Clinical Faculty	AAS	RDMS (OB/GYN)	PT	2011
Loretta Visconti	Laboratory/Clinical Faculty	BS AS	RDCS (AE), RVT, RMA	PT	2011

## **Professional Activities**

[Special projects, reassigned time, professional organizations, grants, partnerships, publications, presentations, other contributions, ...]

Christine Henkel MS RDMS (Abdomen and Ob/Gyn)

Ob/Gyn Item Writer/Mentor Group Lead (oversee volunteers that write items (questions) for the ARDMS Ob/Gyn Registry Exams.)

Member of American Institute of Ultrasound in Medicine (AIUM)

Geralyn Collins Eisler RN, RDMS (Abdomen and Ob/Gyn), RVT, RDCS

Member SDMS

Currently researching the effect of student generated questions on student's perceived readiness for registry exams.

Incorporated service learning into Advanced Practice Class-Class of 2017- 1<sup>st</sup> DMS class to earn service learning

Participated in Sonography presentation for ESL students

## **Adjunct Faculty**

[Hiring, coordination, support, communication ...]

Adjunct faculty are hired on an as needed basis. Potential hires meet with the Dean and Program Director before being hired. Adjuncts meet with human resources during adjunct orientation and meet with the DMS faculty during summer and winter adjunct conferences. During the adjunct conferences updated adjunct manuals are distributed and updates, changes and challenges are discussed. Adjunct faculty are restricted to 9 hours and as a result there is a need for many adjuncts. Three new adjuncts Jorge Alvarez, Urvashi Paghdal and Donna Song, joined the DMS department in fall 2016.

Adjuncts work primarily in the clinical setting and some of them work on campus. Adjuncts have the opportunity to participate in the adjunct faculty development program and earn stipends while enhancing their skills.

The coordination and scheduling of adjuncts in the clinical setting is handled by the clinical coordinator. Adjuncts are assigned to meet weekly with students in the clinical setting. Adjuncts must commit to certain clinical days and hours. A copy of the adjunct location grid is kept on file each semester by the program director, clinical coordinator and administrative secretary. Coordination and scheduling of adjuncts on campus is handled by the program director.

All adjuncts maintain current registries, CME's and many attend professional development conferences. Adjuncts have access to computers and copy machine at the adjunct office. They also have access to the library, CITL, copy center, media and help desk support.

Communication is encouraged and usually occurs via email and via phone during the semester. Adjuncts are instructed to notify the program director if a student is having difficulty in clinical. Likewise, if a student is experiencing challenges scanning in lab, the program director will reach out to the clinical faculty adjunct. The goal of this communication is to take every opportunity to help an at-risk student overcome any scanning challenges they are facing by focusing our lab and clinical efforts concurrently. This semester the program director sent an email to all freshman clinical faculty adjuncts to get feedback and assess if there were any at risk students during the half way point. The adjunct faculty response was insightful and they seemed to

appreciate that we value their feedback. This proactive as opposed to reactive approach will help to increase student's success in the program.

### **Staff**

[Secretarial/clerical support, other staff support ...]

The Health Professions administrative assistant is available to help with numerous tasks. Some of the many needs of the program include scheduling events, mailings, placing work orders, assisting with the day to day needs of the program. The dean's administrative assistant oversees orders, schedules appointments. Both assist with needs that arise during accreditations and program reviews.

### **Data Needs**

What additional data that is currently not available would have been helpful to effectively evaluate this area of the program?

None at this time

## **FOCUS ON CURRICULUM**

Reflect on the curriculum for the program—the courses, the scope and sequence, articulation with other institutions, teaching innovations, and other relevant issues—**please comment on only those which are applicable to this program.**

### **Summary of Program Curriculum**

[Degrees, certificates, sequences of courses] Attach copies of Program Learning Outcomes, Curriculum Maps and Master Course Syllabi, where applicable

The Diagnostic Medical Sonography Program follows a two-year sequence. Fall semester, spring semester and a six-week summer session for both year one and year two. The students earn an Associate's Degree in Applied Science. After year one, the students are eligible to take the SPI –Sonography Principles & Instrumentation exam. Sixty days before graduation, students who have successfully completed the SPI exam can take specialty exams in Abdomen, OB/GYN and Adult Echo. The credentials will not be released until the students graduate in August.

## Program Courses

### I. First Semester

BIO-109	Anatomy and Physiology I	4
DMS-101	Ultrasound Physics and Instrumentation I [Fall Only]	2
DMS-102	Clinical Medicine and Patient Care [Fall Only]	2
DMS-113	Abdominal Sonography I [Fall Only]	3
DMS-115	Cross-Sectional Anatomy [Fall Only]	4
WRT-101	English Composition I	3
<b>Total Credit Hours:</b>		<b>18</b>

*DMS-101, DMS-102, DMS-113, DMS-115: Offered only in fall semesters.*

### II. Second Semester

BIO-209	Anatomy and Physiology II	4
DMS-201	Ultrasound Physics and Instrumentation II [Spring Only]	2
DMS-204	Introduction to Medical Imaging [Spring Only]	1
DMS-205	Obstetric and Gynecological Sonography I [Spring Only]	3
DMS-213	Abdominal Sonography II [Spring Only]	3
DMS-218	Ultrasound Clinic I [Spring Only]	1
WRT-201	English Composition II	3
<b>Total Credit Hours:</b>		<b>17</b>

*DMS-201, DMS-204, DMS-205, DMS-213, DMS-218: Offered only in spring semesters.*

### III. Summer Semester

DMS-219	Ultrasound Clinic II - Abdomen	2
<b>Total Credit Hours:</b>		<b>2</b>

### IV. Third Semester

	Humanities Elective*	3
DMS-214	Echocardiography I [Fall Only]	3
DMS-220	Ultrasound Clinic III - Obstetric and Gynecological Sonography [Fall Only]	2
DMS-226	Obstetric and Gynecological Sonography II [Fall Only]	3
DMS-229	Vascular Imaging [Fall Only]	2
<b>Total Credit Hours:</b>		<b>13</b>

*DMS-214, DMS-220, DMS-226, DMS-229: Offered only in fall semesters.*

### V. Fourth Semester

	Free Elective	3
DMS-221	Ultrasound Clinic IV - Echocardiography [Spring Only]	2
DMS-227	Echocardiography II [Spring Only]	3
DMS-228	Advanced Ultrasound Practices [Spring Only]	1
PSY-101	General Psychology	3
<b>Total Credit Hours:</b>		<b>12</b>

*DMS-221, DMS-227, DMS-228: Offered only in spring semesters.*

## VI. 2nd Summer Semester

DMS-222	Ultrasound Clinic V - Vascular [Summer Only]	1
DMS-230	Comprehensive Review [Summer Only]	3
<b>Total Credit Hours:</b>		<b>4</b>

## VII. General Education Requirements

### VIII. Communication

WRT-101	English Composition I	3
WRT-201	English Composition II	3
	or	
WRT-202	Technical Writing	3
<b>Total Credit Hours:</b>		<b>6</b>

### IX. Humanities\* and Social Sciences

One 3-credit general education Humanities elective to be selected from the following fields: Arts (Art [ART], Music [MUS], Theatre Arts [THR], Cinema Studies [CIN]); History (HIS); Literature (LIT); Philosophy and Religion (PHR); World Languages and Cultures (LAN).	3
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### X. Social Science Course:

PSY-101	General Psychology	3
<b>Total Credit Hours:</b>		<b>6</b>

### XI. Mathematics, Natural Sciences, and Technology

BIO-109	Anatomy and Physiology I	4
BIO-209	Anatomy and Physiology II	4
<b>Total Credit Hours:</b>		<b>8</b>

Total Credit Hours: 20-22

## XII. Program Requirements

DMS-101	Ultrasound Physics and Instrumentation I [Fall Only]	2
DMS-201	Ultrasound Physics and Instrumentation II [Spring Only]	2
DMS-102	Clinical Medicine and Patient Care [Fall Only]	2
DMS-113	Abdominal Sonography I [Fall Only]	3
DMS-213	Abdominal Sonography II [Spring Only]	3
DMS-115	Cross-Sectional Anatomy [Fall Only]	4
DMS-204	Introduction to Medical Imaging [Spring Only]	1
DMS-205	Obstetric and Gynecological Sonography I [Spring Only]	3
DMS-214	Echocardiography I [Fall Only]	3
DMS-227	Echocardiography II [Spring Only]	3
DMS-218	Ultrasound Clinic I [Spring Only]	1
DMS-219	Ultrasound Clinic II - Abdomen	2
DMS-220	Ultrasound Clinic III - Obstetric and Gynecological Sonography [Fall Only]	2
DMS-221	Ultrasound Clinic IV - Echocardiography [Spring Only]	2
DMS-222	Ultrasound Clinic V - Vascular [Summer Only]	1
DMS-226	Obstetric and Gynecological Sonography II [Fall Only]	3
DMS-228	Advanced Ultrasound Practices [Spring Only]	1
DMS-229	Vascular Imaging [Fall Only]	2
DMS-230	Comprehensive Review [Summer Only]	3

*DMS-101, DMS-102, DMS-113, DMS-115, DMS-214, DMS-220, DMS-226, DMS-229: Offered only in fall semesters.*

*DMS-201, DMS-213, DMS-204, DMS-205, DMS-227, DMS-218, DMS-221, DMS-228: Offered only in spring semesters.*

Total Credit Hours: 43

## XIII. Free Elective

Total Credit Hours: 3

TOTAL CREDIT HOURS: 66

### Specific Program Notes

\*[General Education Course List](#).

**All DMS courses must be taken in the specified sequence.**

Students enrolled in this program **ARE REQUIRED** to successfully complete a course in basic algebra if indicated by Placement Testing.

### Curricular Issues

[Articulation, program development, course development]

The program is designed to meet the requirements set for accredited programs by CAAHEP Commission on Accreditation of Allied Health Education Programs. The curriculum ensures the achievement of program goals

and learning domains. Instruction must be an appropriate sequence of classroom, laboratory, and clinical activities. Instruction must be based on clearly written course syllabi that include course description, course objectives, methods of evaluation, topic outline, and competencies required for graduation.

Rutgers offer a bachelor's degree program for Diagnostic Medical Sonography. Fairleigh Dickenson University offers a bachelor's degree in Allied Health Technology and accepts the DMS courses from Bergen Community College.

### **Lead-in Courses**

[Developmental preparation, prior courses and their impact, alignment with AGEC or with Course Equivalency Guide, dual enrollment or articulation agreements with high schools, ...]

The application process begins with completion of all basic skill requirements being met. All basic skills, English as a Second Language (ESL) courses and prerequisites (see below) must be **completed** by the application deadline (Feb. 1), and a minimum GPA of 2.5 is required.

### **Prerequisite Courses for application to the Diagnostic Medical Sonography Program**

- Algebra (prior degree or Basic Skills Algebra course satisfies this requirement)
- Anatomy and Physiology 1\* (BIO 109 at BCC)
- A college level Physics course\* (PHY 185 at BCC)

\*Both science courses must be 4 credits with a lab, must have no online components, earn a grade of at least C, and must have been completed within the past (5) years from the time of application to the DMS program.

Senior high school students may apply to the program only if they have taken or are currently enrolled in Advanced Placement Biological Science AND Advanced Placement Physics. AP test documentation will be required. High School algebra is also required. If high school prerequisites are not satisfied, the student must apply to BCC and follow the program prerequisites stated above.

Prerequisite courses and general education courses may be accepted if they have been taken at a Middle States Accredited College and fall within the GPA and 5 year guidelines.

### **Application to the Diagnostic Medical Sonography Program is as follows;**

Current BCC degree seeking students must submit a "change of curriculum" form.

Applications are reviewed the first week of February. Letters will be sent regarding the acceptance or denial of the application. If an application is denied, information stating the reason for denial will be included.

### **Criminal History Background Check**

When it is determined that the applicant meets the admission criteria, they will receive an email and a letter from the Dean of Health Professions regarding the completion of the Criminal History Background Check (CHBC). The letter will provide the information needed to complete the process electronically and must be initiated within five (5) days of receipt of the letter. The cost for the background check is approximately \$70.00. Please note that the CHBC is a requirement of the accrediting agency of our clinical education centers and not Bergen Community College.

The applicant will not be permitted to proceed with the application process if there is ANY infraction on the CHBC.

## **HESI Admission Assessment Examination**

When a clear criminal history background check is received, the applicant will be invited to take the HESI Admission Assessment Examination (a standardized exam for Health Professions.) The HESI exam is currently administered by Prometric Testing Centers. They will receive a letter from the DMS Program Director with detailed information regarding the testing procedure.

HESI Admission Assessment Examination – Diagnostic Medical Sonography Modules:

- Science
- Biology (AP HS students only)
- Anatomy and Physiology (college students only)
- Math
- Reading Comprehension
- Vocabulary
- Grammar
- Personality Profile
- Learning Style

The top fifteen (15) scorers on the HESI Admission Assessment Examination will be invited to start the program in September

## **Follow-up Courses**

[Sequential courses, connecting activities ...]

The DMS program follows a sequence of didactic, lab and clinical. While there are no follow up courses, registered sonographers are required to complete 30 credits of continuing education every three years. Students and alumni also have the opportunity to practice their scanning skills during our recently added (Fall 14) Saturday lab.

## **Scheduling**

[Enrollment patterns and trends; time and date issues such as day, afternoon, evening, or weekend, format issues such as self-paced, distance, or short-term; ...]

The Diagnostic Medical Sonography Program maintains a tight schedule. Two cohorts are simultaneously completing the sequence of didactic, lab and clinical learning. As every lab must meet in the same room the students are informed that they must be flexible as classes will meet in both the day and evening hours. Due to lack of clinical sites, senior students are split into Mon/Tues and Thurs/Fri clinical rotations during the fall and spring. Wednesdays and evenings are reserved for seniors didactic and lab. Freshman attend didactic and lab classes four days a week in the fall and two days a week and evenings in the spring as they are in clinical on Thurs/Fri. Both cohorts attend summer clinical five days a week in clinical sites for either summer 1 or summer 2. The clinical coordinator schedules student's clinical rotations and faculty is scheduled for each student's rotation to provide one on one instruction.

3. Both freshman and seniors meet once a month in the spring semester for Dr. Ayers, DMS medical director, presentations.

## **Assessment**

[Ways in which the program addresses the college's commitment to assessment and assesses its program learning outcomes, changes that have been made to the curriculum as a result of assessment ...]

The program director is required to complete and submit a yearly annual report to the accrediting agency, Joint Review Committee-DMS.

In 2015 the JRC conducted a site visit and as a result The Diagnostic Medical Sonography Program was awarded re-accreditation for a period of 10 years, the maximum time granted by the JRC-DMS.

The DMS program also utilizes the college assessment liaison to identify strengths and weakness.

The program assesses students in didactic, lab and clinical areas. The students are assessed by written, quizzes, tests, lab activities, reports, presentations and scanning competencies. Below 75 is a failing grade in the DMS program.

The program assesses itself with student evaluations, graduate surveys, resource surveys and employer surveys

## **Innovations or Changes in Last Five Years**

[New issues, significant changes, improved methodologies ...]

All faculty must provide students grades via Moodle.

The echocardiography instructor has been replaced with an instructor with over 20 years of experience, Rose Marie Loffredo. Student evaluations, program assessment and direct observation by the program director were helpful in identifying this area of weakness. A major change in the accountability of lab instructors has been instituted in the fall 2016. Instructors must prepare a lab schedule for the entire semester before the start of the semester. This schedule is equally divided so each student has an equal amount of scan time and no one will be finished lab early. Each lab instructors is assigned to a specific group each week. The instructor is responsible for reviewing the students work with the student after each lab session. This process enhances the student's ability to self-evaluate, holds the student accountable to productivity, and holds the lab instructors accountable to a specific group of students for the entire time lab is in progress. Additionally, students are instructed to send all studies to PACS after every lab session, except for echo as the clip stores are better reviewed on the ultrasound machines. Five of our six ultrasound machines used for scan lab have the ability to send to PACS.

The creation of Saturday scan lab has been very successful. Saturday scan lab is open to current students who want to work on their scanning skills and alumni. Previously if a graduate did not acquire employment immediately after graduation they lost their scanning skills over time. Saturday scan lab gives graduates the ability to practice their skills and be competitive in the job market.

The DMS program recently acquired through a grant a portable Mindray ultrasound machine. This portable machine gave our students the ability to participate in Community Health Week and demonstrate carotid ultrasounds. Service Learning has been earned for the first time by the class of 2017. Seniors students, planned, implemented and reflected on a stroke prevention ultrasound display during Community Health Week. Additionally, the students will be able to practice 3D ultrasound on our new for 2017 fetal phantom. The combination of portable ultrasound machine knobology skills and 3D experience will prove to enhance our student's competitiveness in the job market.

- Students have participated in the Celebration of Life Walk for 3 years.
- DMS students have collaborated with medical office assistant students to practice interview skills and utilized the surgical technologist OR suite to become familiar with operating instruments and patient positions used during ultrasound procedures.
- Kahoot has been introduced to DMS 205 and DMS 226. It is well received as a fun, yet useful way to review class material by the students.
- The DMS program is in the process of acquiring a potential new clinical site.

### **Data Needs**

What additional data that is currently not available would have been helpful to effectively evaluate this area of the program?

None at this time.

### **FOCUS ON SUPPORT**

Reflect on the support issues related to this program — **please comment on only those which are applicable to this program.** To what degree are they met, where there are kudos to be given, changes that have taken place, improvements to be made...?

### **Technology**

[Hardware and software, technical issues and/or support, instructional issues and/or support, training for faculty ...]

As of fall 2016 the DMS program has moved into the Health Professions Building. Our classroom/lab has been outfitted with a smart board, surround sound, document camera, DVD player, instructor's computer and the ability to connect four out of seven of our ultrasound machines to the smart board. After an introductory training session, the media department has been available to help with any issues. The smart board enables instructors to write directly on power point presentations with the virtual pen or finger. This has proven very helpful as we can now draw or point directly on our power point slides when teaching anatomy and pathology. We are in the process of obtaining an additional workstation so our students can access PACS without having to use the instructor's workstation.

### **Facilities and Equipment**

[Cycles for replacement or refurbishment of equipment, classroom spaces, labs, furniture, concerns, needs ...]

We are in the process of requesting an additional stretcher for phantom scan practice. The DMS program recently received a scrotal phantom to replace our non-functional scrotal phantom and a breast phantom to supplement the didactic portion of our small parts unit.

Three of our ultrasound units are at end of life and Dean Barnard has supported our need for three replacement ultrasound units. The current units do not communicate with the smartboard and produce inferior diagnostic images. We particularly need to acquire units with updated cardiac packages as we currently do not have the technology to teach and demonstrate Strain and tissue Doppler in echo lab. Our classroom has been outfitted with room darkening shades as the original shades allow too much light into the lab. Our classroom is clean, roomy and has adequate seating. Our lab portion is equipped with privacy curtains, six workstations, two sinks for hand washing and an eyewash station. Due to the fact that our students must full their bladders for lab, the DMS lab is equipped with a private lavatory.

## **Learning Resources**

[Collection of books, databases, journals, videos... learning assistance or tutoring ...]

The DMS classroom has a library consisting of textbooks, study guides and DVD's. The library holdings contain many resources for the students including books to borrow and many DVDs and books on reserve.

The library carries *The Journal of Diagnostic Medical Sonography (JDMS)* which is published bimonthly by the Society of Diagnostic Medical Sonography. Additionally, the library provides links to multiple journals, DVD's and learning resources. The DMS program frequently recommends multimedia purchases for program use. The library is currently in the process of replacing VHS titles with DVD's for use in the Advanced Practice class, DMS 228.

## **Marketing and Public Relations**

[Brochures, print materials, website, special events, recruitment efforts ...]

The DMS program is listed on the CAHEEP site as an accredited school for diagnostic sonography. Bergen Community College maintains a website providing information regarding the application process, HESI test, program outcomes, clinical affiliates, curriculum, health professions information sessions and contact information.

DMS faculty attend the health professions information sessions. Prospective students learn about the application process, pre-requisites, rigors of the programs and they have an opportunity to ask questions. The program director and full time faculty are additionally available to meet with potential applicants who are referred through advising.

The DMS class hosted a booth during 2017 Community Health Week. The students planned, designed and demonstrated a stroke awareness exhibit. The students designated topics, researched, wrote scripts and practiced as a group on their own time prior to the event. The exhibit was designed to propel an interested attendee through a series of posters and mini lectures culminating in a carotid ultrasound exam demonstration. The carotid ultrasound demonstration was possible due to the addition of the portable Mindray ultrasound machine to the DMS program.

## **Support Services**

[Advisement, assessment, testing, job placement ...]

The program director and full time faculty obtain referrals through the Office of Advising.

Freshman students attend a midsemester conference during the Fall and Spring semester. This is attended by three didactic instructors and lab instructors.

At risk students are addressed on a PRN basis and faculty meet midsemester to identify any at risk senior students. Advisement will be offered if an at-risk student is identified. Faculty are available during office hours and by appointment.

Although no formal job placement is offered many of our students obtain employment at clinical sites and by faculty referral. Many sites will email the program director if they have employment needs and the information is passed on to graduates seeking employment.

## **Resources, Budget**

[Staffing, operating and capital budgets, grants ...]

The program is staffed by two full-time, tenured or tenure track faculty and 19 adjuncts. One full-time faculty serves as the Program Director and the other ideally will serve as the Clinical Coordinator. The previous Program Director, Christine Henkel, has stepped down as the Program Director and announced her retirement, effective June 30, 2017. Currently an adjunct is serving as the Clinical Coordinator, but the anticipated tenure track position will assume the role of Clinical Coordinator.

A need for an increase in supplies budget was realized due in part to the success of Saturday scan lab, a large freshman class size and changes implemented in echo lab. Echo lab students are required to change into echo gowns and apply EKG leads during each scanning session.

A new portable ultrasound machine with 3D capability and a fetal phantom were obtained in 2016/17 via grant funds.

## **Data Needs**

What additional data that is currently not available would have been helpful to effectively evaluate this area of the program?

None at this time

## **FOCUS ON COMMUNITY**

Reflect on the degree to which you seek regular input from outside of the college—the community—for this program— **please comment on only those which are applicable to this program.**

### **Community Groups**

[High school connections, community agency connections, other forms of community involvement ...]

The senior DMS students hosted a table during Community Health Week on April 5, 2017. The students provided information regarding stroke awareness and demonstrated a carotid ultrasound exam during the event. The entire senior class participated and for the first time the DMS students earned service learning. The DMS students, both freshman and seniors, have shown strong support for The Celebration of Life Walk hosted by Bergen Community College yearly. One hundred percent of the freshman attended the walk this spring.

The DMS Program appreciates the suggestions and feedback from the community members of the advisory board. At our recent advisory board meeting, a sonographer in the field expressed her support for the new breast phantom that the DMS department recently received, citing that breast exam protocol knowledge will be a useful skill for BCC students to learn and protocol experience will give BCC students an advantage in the clinical setting. The success of Saturday scan lab, which was suggested by a member of the advisory board, has enabled our students and alumni to prepare for scanning interviews and increase the chance for employment. Furthermore, hiring managers and administrators are impressed by Bergen Community College's continued commitment and support of their students after graduation.

The students of the DMS program are highly regarded in the field. Dr. Sidney Edelman, director of ESP Ultrasound, contacted the program director to request that BCC DMS students work the registration desk for his June 2017 New Jersey seminar. Dr. Edelman specifies that representatives be from an accredited program. It is impressive the Dr. Edelman chose to ask BCC students to work at his seminar instead of students from the four-year program in New Jersey. Four rising seniors are looking forward to representing Bergen Community College at the seminar.

### **Community Issues Related to Program**

[Trends, employment trends or projections, transportation, funding]

The latest information from the BLS reveals that by mid-2012, there were over 2,000 sonographers working in the state of NJ. Ultrasound technician salary in NJ was \$68,080 annually during that year, with an average hourly salary of \$32.73. The median salary was only a few cents lower at \$32.48.

In 2012, there were 110,400 sonographers employed in the entire country. The predicted increase in employment levels by 2022 is 39%, adding a total of 42,700 jobs to the tally. The predicted number of sonographers working in 2022 is 153,200, 67,300 of these are cardiovascular sonographers and 85,900 are general sonographers.

A challenge in the geographic area is the competition from surrounding schools, particularly in the field of echocardiography. Students from schools learning only echo have an opportunity to spend long clinical assignments in a particular institution. Although these students are not as versatile and educated as the Bergen students, who learn four specialties, they have the advantage of an extended training opportunity while completing their clinical hours. As a program, we have been working together to help offset this. Our lab procedures, lab instructor accountability, lab review and Saturday lab will help us bridge this gap. A proposal for three ultrasound machines, outfitted with state of the art cardiology software packages has been submitted. This in combination with the previously mentioned changes will help Bergen overcome this challenge.

### **External Requirements or Considerations**

[Certifications, accreditations, licensures, professional organization status or involvement ...]

DMS students from Bergen Community College are registry eligible in three areas 60 days before graduation. This enables our students to apply for employment as registered diagnostic medical sonographers. Although the actual credential will not be released until graduation this gives our students an additional advantage over non-accredited programs. Any human resource manager will tell you that it is expensive to hire and train a diagnostic medical sonographer. Some employers will offer the option of hiring a sonographer contingent upon obtaining a registry credential within a year, but this is risk because some will not pass. Current trends reflect the need for students to be registered before securing employment. As of 2017 Palisades General will not move forward with the hiring process until the student obtains a registry credential. Nyack Hospital will initiate the hiring process, but will rescind the offer if the applicant does not pass the registry before the start date.

## Advisory Boards

[Advisory Boards' composition and input, number of Advisory Board meetings during the last two years, degree to which the Advisory Council reviews the competencies of the degree or certificates and program courses, timeframes for last reviews, other functions or activities of the Advisory Board, ...]

The advisory board meets annually to review the statistics, participate in goal planning and review program outcomes. The Saturday scan lab was implemented in part due to the suggestion of the advisory board members. This lab has enabled alumni to refresh their scanning skills in preparation for interviews. Alumni would did not secure employment immediately after school are able to maintain a degree of competitiveness in the interview process.

DIAGNOSTIC MEDICAL SONOGRAPHY 2016 - 2017		
NAME	ADDRESS	TERM
Ms. Tiziana Alongi	Staff Sonographer Clara Mass Medical Center 1 Clara Mass Drive Belleville, NJ 07109	2+ 16-18
Dr. Frederick P. Ayers	Medical Director – Diagnostic Medical Sonography 28 Crescent Bend Allendale, NJ 07401	*
Ms. Amy Coyle	Manager of Echo and Vascular Lab Englewood Hospital Englewood Hospital & Medical Center 350 Engle Street Englewood, NJ 07631	2+ 16-18
Mr. Carmen Criscione	VP Sales & Development Jefferson Medical & Imaging 5470 Berkshire Valley Road Oak Ridge, NJ 07438	2++ 16-18
Ms. Noreen Delaney	174 Midwood Road Paramus, NJ 07652	3 16-19
Ms. Robin Gutwill	Sonographer Morristown Hospital and Medical Center 100 Madison Avenue Morristown, NJ 07960	2++ 16-18
Mr. Tom Wall, BS, RDMS, RVT	Ultrasound Vascular Dept. Mgt. Holy Name Hospital 718 Teaneck Road Teaneck, NJ 07666	2++ 16-18

Ms. Alexis Cucinella	Student Representative Bergen Community College	2 16-18
Ms. Victoria Lambropoulos	Student Representative (Class of 2017) 529 Oakdene Avenue Ridgefield, NJ 07657	1 16-17
Prof. Geralyn Collins-Eisler RN, RDMS, RDCS, RVT	DMS Program Coordinator Bergen Community College	
Prof. Jaclyn Rose BS, RDMS, RDCS, RVT	Interim Clinical Education Coordinator DMS Bergen Community College	

Updated: October 6, 2016

2+ = 1<sup>st</sup> 2 Year Reappointment

2++ = 2<sup>nd</sup> 2 Year Reappointment

### **Data Needs**

What additional data that is currently not available would have been helpful to effectively evaluate this area of the program?

None at this time.

### **SUMMARY**

#### **Program Achievements, Progress Made Since Last Review**

[Major achievements, changes, implementations, progress made since the time of the last review]

The Diagnostic Medical Sonography Program has moved into the new Health Professions Building as of May 2016. The new facility enable the Health profession programs to easily interact and collaborate. The DMS students have collaborated with the Medical Office Assistants, utilized the Surgical Tech lab and have demonstrated carotid ultrasounds to the Bergen Community College community including prospective DMS students from the ELS program during Community Health Week. Our state of the art classroom is equipped with a lavatory, movable seating for 24, six scanning bays and two hand washing stations. We recently acquired a portable Mindray ultrasound machine through a grant purchase. This unit is equipped with a 3D

probe so our students will be better prepared for the workforce, particularly in the specialty of obstetrics. Three of seven of our ultrasound machine are at end of life a purchase requisition has been submitted for replacement units. Newer machines will be outfitted with echo packages that have been lacking. These units will also be able to communicate with PACS and be displayed on the smart board. We are also in the process of obtaining a seventh stretcher which will serve as a permanent phantom station. The change in lab procedures has increased students and lab instructor's accountability.

### **Mission/Goals/Objectives**

[To what degree does the program meet its mission, goals and objectives?]

We look forward to utilizing the ultrasound capabilities of the Sim Mom. Training through Laerdal is in the process of being scheduled and is anticipated to occur this summer.

The DMS Program meets and achieves its goals and fulfills its mission. A goal is to increase the percentage of students who take the echo registry and become active in the echocardiography workforce. The institution and the faculty are committed to the goals of the program. The support of the institution and Dean Barnard in meeting this particular goal is evidenced by the requisition of three updated ultrasound units. The commitment of the staff is documented by the signed lab schedules that are submitted to the program director at the end of each semester.

### **Strengths**

[Unique characteristics, special capacities ...]

A strength is the commitment of the administration, dean, faculty and students to the success of the DMS Program. The employment data reflects the needs for qualified sonographers and the DMS program continues to produce strong candidates. The reputation of the BCC DMS program is highly regarded in the field. Our commitment to strengthening the echocardiography component will enhance this. The commitment of our faculty and adjuncts is evidenced by their willingness to embrace recently implemented changes, particularly in lab. The positive feedback loop is inherent in this system, as students become more proficient in part because of the one on one lab instruction and critiques, the instructors feel the appreciation and share in the student's pride of progress.

### **Challenges**

[Concerns, difficulties, areas for improvement ...]

As we increase our focus on our student's success, our attrition rates should decrease leading to a larger senior class size. There is a critical need for quality OB sites for the DMS program to accommodate our senior

student's OB clinical rotations. We are in the process of obtaining a contract with Mid Rockland Imaging which will help to fulfill this need.

The former Program Director, Chris Henkel, has announced her retirement. GERALYN EISLER, former clinical coordinator, has fulfilled the role of Program Director. As a full-time position becomes available, it is imperative to fill this role with a candidate that is committed to the goals of the program. Adjuncts play an important role in the success of the DMS program, but in order to maintain and build upon our strengths, the program needs a dedicated full time clinical coordinator.

### **Celebration and Recognition**

[Awards, honors, special recognitions ...]

The DMS program has received a 10-year reaccreditation status in 2015 after undergoing a comprehensive site visit by the JRC. The 10-year reaccreditation is the longest reaccreditation period permitted by our accrediting agency.

### **Recommendations for Change**

[Internal to program, external to program, new opportunities, is additional data needed to effectively evaluate this program...]

The DMS program is enjoying the Health Professions Building and looks forward to broadening our collaborations with health professions, particularly in the use of the SIM lab.

### **ACTION PLAN**

Program review is a means to an end, not an end in itself. Your final task is to develop a plan to improve the program.

[Identify 2-3 program goals and objectives for the future, improvements planned, changes taking place, responsible parties, timeframes, resource implications, etc....]

1) Goal:

a) Objective:

i) Timeframe:

ii) Responsible Party(ies):

iii) Resource Implications:

b) Objective:

i) Timeframe:

ii) Responsible Party(ies):

- iii) Resource Implications:
- 2) Goal:
  - a) Objective:
    - i) Timeframe:
    - ii) Responsible Party(ies):
    - iii) Resource Implications:
  - b) Objective:
    - i) Timeframe:
    - ii) Responsible Party(ies):
    - iii) Resource Implications:

<b>Goal</b>	<b>Objective</b>	<b>Timeframe</b>	<b>Responsible Party</b>	<b>Resource Implications</b>
<b>Increase students level of preparation for the echocardiography registry exam</b>	<b>Increase the percentage of students who take the echocardiography registry and earn the RDCS credential to 40 %</b>	<b>Spring 2017-2019</b>	<b>program director, echo instructor, echo lab instructors, echo clinical faculty instructors</b>	<b>Utilize the skills and experience of the current echo instructor, lab and clinical instructors. Anticipated utilization of cardiac software on new ultrasound machine when old machines are replaced.</b>
<b>Enhance students' engagement with their community</b>	<b>Students will participate in service learning during community health week and the Celebration of Life Walk</b>	<b>Spring 2017-ongoing</b>	<b>program director, students, adjuncts</b>	<b>Utilize new portable ultrasound machine to demonstrate carotid ultrasounds and increase stroke awareness education</b>
<b>Increase student retention</b>	<b>Obtain an attrition rate of 20% or less</b>	<b>Spring 2017 ongoing</b>	<b>program director, clinical coordinator, didactic instructors, lab instructors and clinical faculty</b>	<b>Addition of <i>Sonographer's Skills</i> power point to orientation, mid semester report from clinical adjuncts to assess progress</b>

## **Guidelines for Writing the Report**

Your report should be a well-organized narrative describing and evaluating your program. Please use a traditional font and point size (such as Times New Roman 12) and number your pages.

Please be sure to check grammar, spelling, and dates. Your report will be viewed by others as representing the quality and integrity of your program.

Consider adding a glossary of terms if the report uses a number of acronyms or abbreviations that a general audience would be unlikely to understand.

Consider using appendices for survey results, audit reports, organization charts, forms, assessment instruments, samples of promotional materials, inventories, etc. Appendices should be numbered or lettered so you can direct readers to them in the body of the report.

## **Presentations at Public Forums**

Program reviews are presented to the college community in a public forum in the fall semester following the submission of the final report in May. Each presentation should last 20 minutes: 10-15 minutes for the presentation and 5 minutes for questions and answers. Academic program review team presentations are to include a brief introduction and the Summary and Action Plan from the academic program review report. A sufficient number of copies of the Summary and Action Plan needs to be reproduced (2-4 pages) for distribution at the public forum. You should not duplicate your entire report for distribution to the college community, although you may make it available electronically.

Team chairs are invited to use PowerPoint or another presentation software system to present program review highlights. You are also invited to produce videos, take photos, etc., for your team's presentation. Each team must rely on its own expertise and resources to produce a presentation.

Team chairs with special presentation needs (i.e., audio or video) must contact Media Services in advance of the presentation date. Team chairs who would like to practice their presentations in IRN120 need to make arrangements with Media Technologies.

For those team chairs using PowerPoint, Media Technologies will need to receive the presentation on a CD or a USB Thumb or Flash drive no later than the morning prior to the presentation date. Due to schedule constraints, Media Technologies will not be able to accommodate media brought by presenters the day of the forum.

## **External Review**

The external review is done by an outside consultant who is an expert in the field, preferably experienced community college colleagues with expertise in academic program review and/or accreditation. The external reviewer is selected by the Divisional Dean based on recommendations from the Team Chair. Once the external reviewer is identified, the Team Chair provides him or her with the preliminary data and information for review. The external reviewer then works closely with the faculty/staff and the Team Chair. The reviewer examines a program's information, relevant data and survey results, course outlines, program requirements, etc., and then participates in an on-site visit which must include a classroom observation (to be determined by the program review team in consultation with the Divisional Dean), and meetings with faculty/staff and students. In an exit interview, the external reviewer meets with the VPAA to offer preliminary recommendations. A final report is generated by the reviewer and submitted as part of the final program review report.

### **Archiving Program Review Forms and Supporting Documentation**

A paper copy of the completed program review including supporting data and other accompanying documentation should be filed with the:

- Department Chair
- Divisional Dean

An electronic copy of the completed program review including supporting data and other accompanying documentation should be filed with the

- Vice President of Academic Affairs

All completed program review forms and accompanying documentation are available for viewing on the BCC Web site: <http://bergen.edu/about-us/institutional-effectiveness/program-review/>

### **BCC VISION, MISSION AND GOALS**

#### **Vision**

Bergen Community College will be a dynamic partner by bridging potential with opportunities for educational, professional and personal growth.

#### **Mission**

To inspire our community to realize a better future.

#### **Values**

To fulfill the vision and mission of Bergen Community College, these core values will guide our daily endeavors: learning, excellence, integrity, respect and creativity.

These core values will guide our daily endeavors.

## HELPFUL TIPS

- \* Identify special data needs early during the summer to allow time to generate the data and provide it when it's needed by the team.
- \* Prepare for the first team meeting by meeting in advance with those who provide support (examples: Institutional Research, tutoring, curriculum).
- \* Adjunct faculty, if selected carefully, can make excellent contributions.
- \* Former and current team leaders can be helpful resources.
- \* Don't hesitate to ask questions and get clarifications.
- \* Team chairs can gain insight by attending the program review public forum presentations.
- \* If some members of the team need to attend team meetings sporadically, or are occasionally unable to attend, e-mail can be used to keep them updated and is also useful as a means of getting a good cross-section of input.
- \* Some have found it helpful to keep the committee to a manageable size.
- \* Once you have started entering information on the program review form, always make a back-up copy!
- \* Be prepared for occasional miscommunications and "bumps in the road."
- \* Start early and do little pieces along the way.
- \* It works well to have team members who are willing to work as a team and figure things out together.