

STATE BOARD FOR COMMUNITY COLLEGES AND OCCUPATIONAL EDUCATION

TOPIC: Bachelor of Applied Science in Sonography

PRESENTED BY: Dr. Landon Pirius, President, Red Rocks Community College

RELATIONSHIP TO CCCS STRATEGIC PLAN:

Transform the student experience; create education without barriers through transformational partnerships; and refine our value proposition through accessibility, affordability, quality, accountability, resource development, and operational excellence.

EXPLANATION:

Pursuant to CCCS's role and mission (§23-60-201, C.R.S.), CCCS may offer technical, career, and workforce development Bachelor of Applied Science (BAS) degree programs. Authority for the Colorado Community College System to offer BAS degrees was made possible by SB14-004 (Community College Four-year Programs), signed by the Governor on February 27, 2014. This proposal seeks approval from the State Board for Community Colleges and Occupational Education (SBCCOE) for a BAS degree in Sonography for Red Rocks Community College (RRCC). The legislative criteria for approval of a BAS degree are set forth below, with a summary of the supporting data demonstrated that the criteria have been met. Additional information is provided in the appendixes.

KEY ASSESSMENTS

1. Data demonstrates workforce and student demand for the degree program.

Data obtained from a Lightcast report (Appendix A) illustrates jobs from 2020-2021 in the Denver region for target occupations related to these CIP Codes: 29-2032, Diagnostic Medical Sonographers and 29-2031, Cardiovascular Technologists and Technicians. In 2020, the greater metro Denver region hosted 1,173 related jobs with high earnings in the area. The national median salary for the occupations is \$80,287, compared to \$97,424 here. The entire Lightcast report is shown in Appendix A.

At Red Rocks Community College (RRCC), there are 131 unduplicated majors seeking Sonography AAS degrees and certificates for the 2024 – 2025 academic year. Student interest in the Sonography field has been increasing, along with the

numbers of completers. The tables below illustrate 5-Year enrollment trends (both Headcount and FTE) in Sonography at RRCC.

Program FTE Detail

Academic Year	FTE	Change	Change %
2019	20.57		
2020	21.83	1.3	6.2%
2021	25.5	3.7	16.8%
2022	21.17	-4.3	-17%
2023	27.27	6.1	28.8%
2024	36.83	9.6	35.1%
Overall	153.17	16.3	14%

Program Headcount Detail

Academic Year	Headcount	Change	Change %
2019	73		
2020	88	15	20.5%
2021	93	5	5.7%
2022	78	-15	-16.1%
2023	91	13	16.7%
2024	131	40	44%
Overall	554	58	14.1%

During the academic years of AY23 and AY24 enrollment began to surge in the Sonography Program due to the addition of Cardiac Sonography to the program. Prior to AY23, only general sonography was offered. RRCC now has a certificate in Echocardiography, an AAS in Diagnostic Cardiac Sonography, and an AAS in Diagnostic Medical Sonography.

The AAS Sonography degrees at RRCC would convert to BAS degrees with the approval of this proposal. The Echocardiography certificate would remain a certificate option for students who are already Sonography professionals looking to upskill in the field.

A survey was deployed to a population of Medical Imaging students, either current or recent graduates, in September 2023 for one week. The college received 103 responses. Students were asked additional educational opportunities that were

not currently being offered at RRCC. Of the respondents, 88 (85%) indicated an interest in advancing their education beyond an AAS degree. 57 students (55%) are interested in a one-year certificate program, and 30 students (31%) would be interested in obtaining a BAS in Sonography from RRCC even if it was an additional two years of schooling. A table of results is attached as Appendix B.

2. The regional and professional accreditation requirements for the degree program, if applicable, have been met.

Regional accreditation. This program will require approval from the Higher Learning Commission (HLC). Upon receiving all appropriate state approvals for this program, as outlined in the CCCS State Procedure SP 9-30b: (<https://cccs.edu/policies-andprocedures/system-presidents-procedures/sp-9-30-bachelor-of-applied-science-degrees/>), RRCC is prepared to submit the New Degree Program Screening Form and the Substantive Revision Form to HLC. Since RRCC already has more than three BAS programs, it is likely that an HLC site visit will not be required. Final HLC approval may take two-three months.

Professional certifications. Red Rocks Community Colleges students are eligible to take the ARDMS (American Registry for Diagnostic Medical Sonography) upon completion of the program. (<https://www.ardms.org/>)

3. Providing the degree program within the Community College is cost-effective for the students and the Community College System.

The BAS in Sonography pathway at RRCC will serve students in the Sonography program better than the current pathway. Currently, to be eligible to apply for the Sonography programs, students must have completed a 2-year allied health degree or bachelor's degree in any major prior to applying. Therefore, most students who graduate from the programs have two associate degrees. It will be better serving for RRCC students to graduate with a BAS degree which can lead to employment opportunities in education and / or a supervisory role.

The pre-requisite degree requirements will satisfy the first 60-64 credits of the 120 credits required to complete the BAS degree. Pursuant to Colorado Community College System Procedure 9-30b, the intention is for students to complete an AAS or equivalent degree with similar competencies and credits before pursuing the BAS degree. Although there may be exceptions due to transfers from institutions outside of the CCCS, this procedure ensures that students incur costs at the lower-division course rates for at least 50% of the degree.

The curriculum for each BAS in Sonography degree is included in Appendix C.

Tuition for the 3000 and 4000 level courses will be charged at a differential tuition rate that is consistent across CCCS. This rate is aligned with the Colorado Online tuition rate for upper-division courses before applying the Colorado Opportunity Fund (COF). This rate of tuition supports the necessary expenses of offering courses online and remains cost-effective for students.

This will be the only Sonography BAS degrees in the state of Colorado. Multiple students commented in the survey that this is an important consideration for them.

This degree program is cost-effective to the students; however, it is also cost-effective to the individual institutions and the Community College System, at-large. The financial analysis tool indicates that this program will yield a positive return on investment, starting with the first year of implementation, and growing each year thereafter.

4. Providing the degree program's projected facility and equipment costs are considered.

RRCC's Financial Analysis document (Appendix D) includes projected costs of faculty, instructors, and administrative expenses. The BAS program is expected to launch in the Fall of 2025, contingent upon receiving all required approvals. Enrollment in each degree will be between 8-10 students. This estimate is consistent with prior year enrollments in the Sonography programs. The Sonography program will continue to utilize the selective admission process as outlined on the RRCC website: <https://www.rrcc.edu/academic-programs/sonography>. Facility and equipment costs are neutral since the infrastructure is already in place for the program.

Faculty and Staffing Analysis.

The Department Chair / Program Director, Martha Rivero, has been at RRCC for almost 8 years and is dedicated to the mission and vision of the college and the program. RRCC approved the addition of a full-time faculty member for AY25, and a search was conducted in the fall of 2024 resulting in the hiring of Holly Cox, who will transition from an adjunct faculty role to a full-time faculty role in January of 2025. Having two full-time faculty members to support teaching and administrative task within the program will be key to the success of the BAS implementation.

The Financial Analysis projects that more than half of the courses will be taught by full-time faculty members with the other half taught by instructors. Current RRCC faculty members have the required credentials to teach the DMS BAS courses. Additional instructors will be hired as needed for specific course content.

Student Support Services Analysis.

All services integral to the success of students will continue to be supported through RRCC's current support model. Students have an assigned health sciences pathway advisor, as well as robust online student support services. This includes an Online Writing Center, Online Math Tutoring, 24/7 tutoring in a variety of subjects through TutorMe, and a 24/7 technology helpdesk through CCCS. Additionally, students will have access to in-person services during normal hours of operation, through their home campus. Course development will include incorporating resources like video tutorials into the course shells, to address technical content. The faculty will continuously meet to analyze success rates and determine if different modalities of delivery are needed for some courses and/or supplemental instructional tools such as video tutorials.

5. The proposed program addresses the effect on existing programs in terms of finances, enrollment, and staff.

The new BAS degree in Sonography would not have any negative financial or enrollment effects on existing programs.

Appendices:

Appendix A: Lightcast Labor Market Data

Appendix B: Student Survey

Appendix C: Curriculum

Appendix D: Financial Analysis



2 Healthcare Practitioners and Technical Occupations in 9 Colorado Counties

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What is Lightcast Data?

Lightcast data is a hybrid dataset derived from official government sources such as the US Census Bureau, Bureau of Economic Analysis, and Bureau of Labor Statistics. Leveraging the unique strengths of each source, our data modeling team creates an authoritative dataset that captures more than 99% of all workers in the United States. This core offering is then enriched with data from online social profiles, resums, and job postings to give you a complete view of the workforce.

Lightcast data is frequently cited in major publications such as *The Atlantic*, *Forbes*, *Harvard Business Review*, *The New York Times*, *The Wall Street Journal*, and *USA Today*.



Report Parameters

2 Occupations

29-2032 Diagnostic Medical Sonographers

29-2031 Cardiovascular Technologists and
Technicians

9 Counties

8001	Adams County, CO
8005	Arapahoe County, CO
8013	Boulder County, CO
8014	Broomfield County, CO
8019	Clear Creek County, CO

8031	Denver County, CO
8047	Gilpin County, CO
8059	Jefferson County, CO
8093	Park County, CO

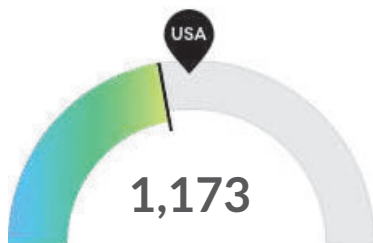
Class of Worker

QCEW Employees

The information in this report pertains to the chosen occupations and geographical areas.

Executive Summary

Aggressive Job Posting Demand Over a Thin Supply of Regional Jobs



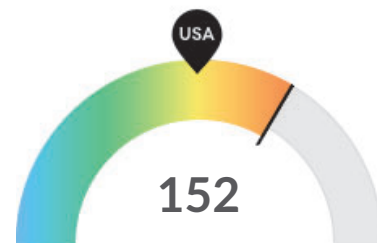
Jobs (2019)

Your area is not a hotspot for this kind of job. The national average for an area this size is 1,387* employees, while there are 1,173 here.



Compensation

Earnings are high in your area. The national median salary for your occupations is \$80,287, compared to \$97,424 here.



Job Posting Demand

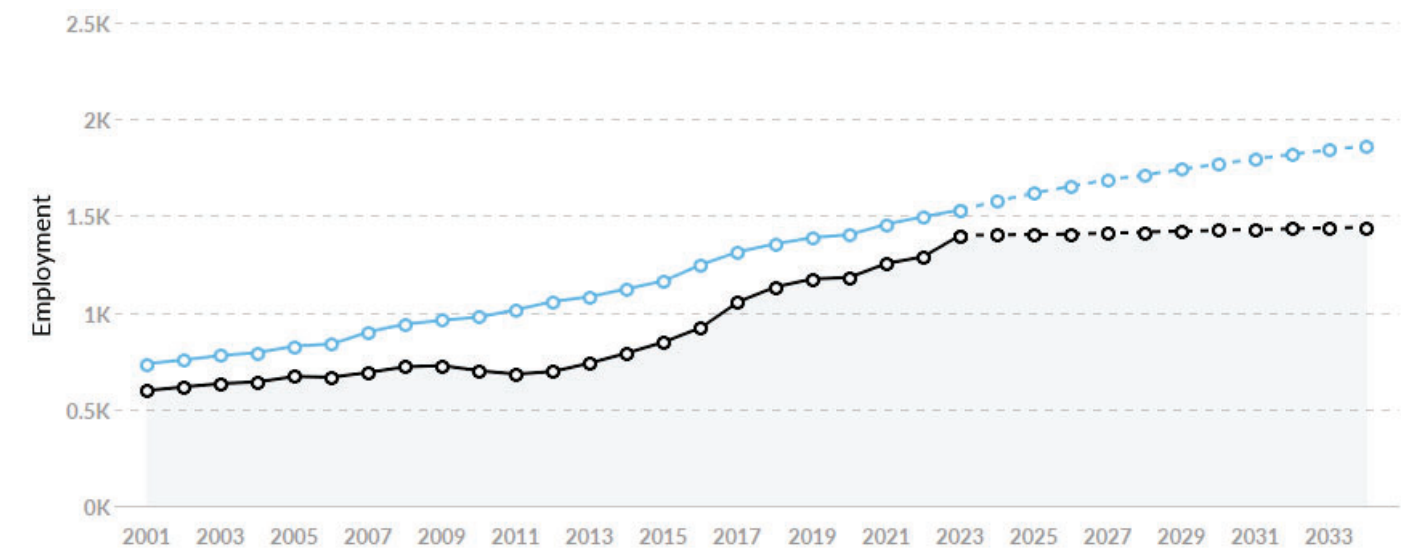
Job posting activity is high in your area. The national average for an area this size is 95* job postings/mo, while there are 152 here.

*National average values are derived by taking the national value for your occupations and scaling it down to account for the difference in overall workforce size between the nation and your area. In other words, the values represent the national average adjusted for region size.

Jobs

Regional Employment Is Lower Than the National Average

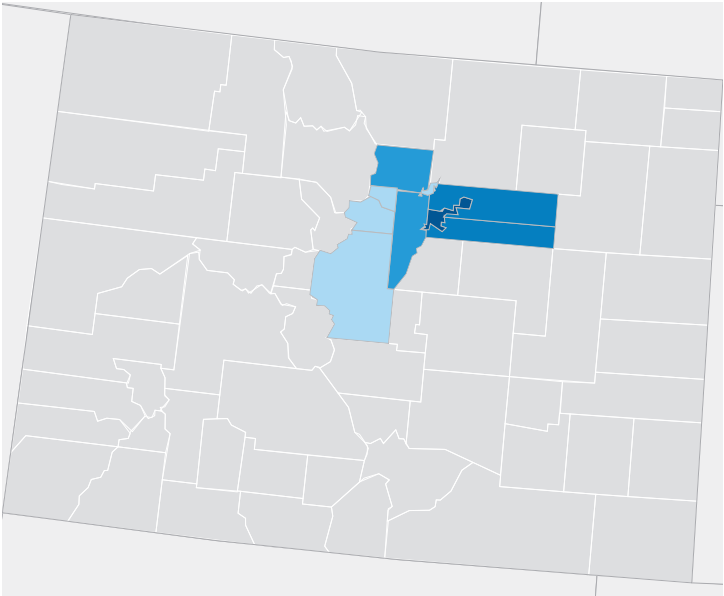
An average area of this size typically has 1,387* jobs, while there are 1,173 here. This lower than average supply of jobs may make it more difficult for workers in this field to find employment in your area.



Region	2019 Jobs	2024 Jobs	Change	% Change
● 9 Colorado Counties	1,173	1,401	227	19.4%
● National Average	1,387	1,576	189	13.7%

*National average values are derived by taking the national value for your occupations and scaling it down to account for the difference in overall workforce size between the nation and your area. In other words, the values represent the national average adjusted for region size.

Regional Breakdown



County	2019 Jobs
Denver County, CO	467
Adams County, CO	217
Arapahoe County, CO	195
Boulder County, CO	158
Jefferson County, CO	131

Most Jobs are Found in the General Medical and Surgical Hospitals Industry Sector

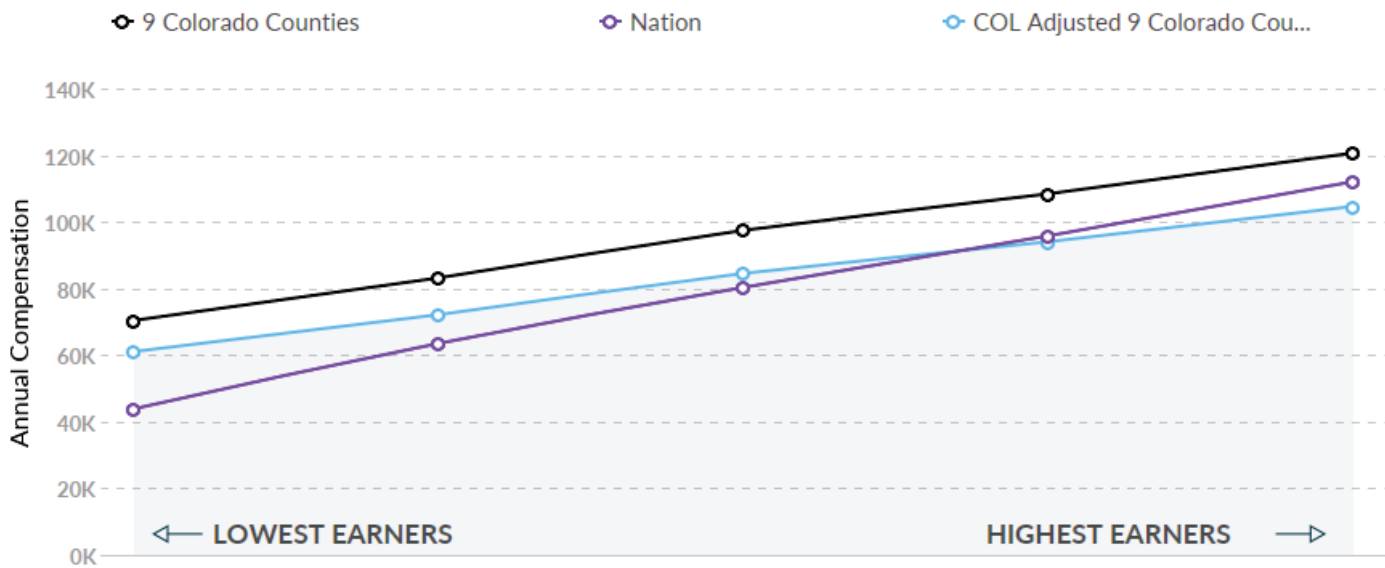


Industry	% of Occupation in Industry (2019)
<div></div> General Medical and Surgical Hospitals	40.4%
<div></div> Offices of Physicians	16.3%
<div></div> Education and Hospitals (Local Government)	12.9%
<div></div> Medical and Diagnostic Laboratories	9.3%
<div></div> Education and Hospitals (State Government)	6.3%
<div></div> Outpatient Care Centers	6.1%
<div></div> Other	8.6%

Compensation

Regional Compensation Is 21% Higher Than National Compensation

For your occupations, the 2023 median wage in your area is \$97,424, while the national median wage is \$80,287.



Job Posting Activity



10,659 Unique Job Postings

The number of unique postings for this job from Jan 2019 to Oct 2024.



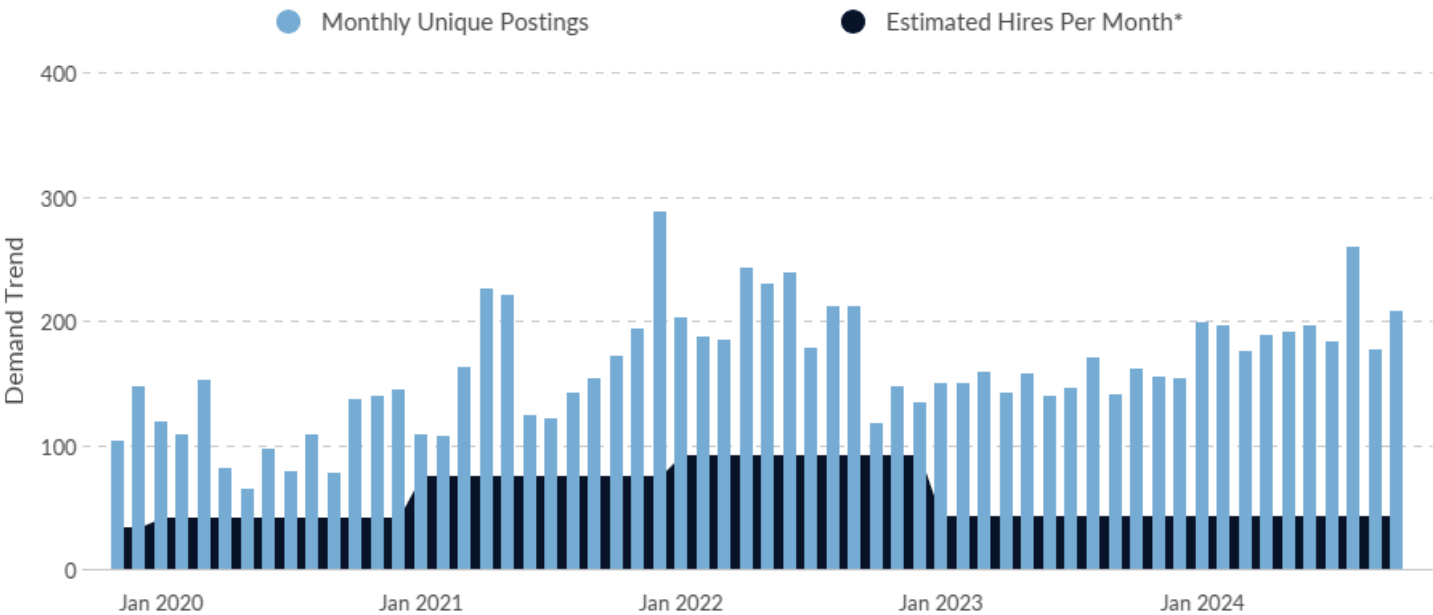
602 Employers Competing

All employers in the region who posted for this job from Jan 2019 to Oct 2024.























25 Day Median Duration

Posting duration is 2 days shorter than what's typical in the region.



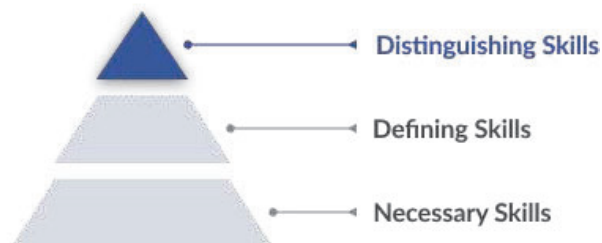
Occupation	Avg Monthly Postings (Jan 2019 - Oct 2024)	Avg Monthly Hires (Jan 2019 - Oct 2024)
Cardiovascular Technologists and Technicians	92	20
Diagnostic Medical Sonographers	68	39

*A hire is reported by the Quarterly Workforce Indicators when an individual's Social Security Number appears on a company's payroll and was not there the quarter before. Lightcast hires are calculated using a combination of Lightcast jobs data, information on separation rates from the Bureau of Labor Statistics (BLS), and industry-based hires data from the Census Bureau.

Top Companies	Unique Postings	Top Job Titles	Unique Postings
UCHealth	1,134 	Sonographers	1,280 
HCA Healthcare	712 	Ultrasound Technicians	658 
Intermountain Health	581 	Diagnostic Medical Sonographers	537 
Healthcare Employment Network	533 	Travel Ultrasound Technologists	503 
Centura Health	493 	Travel Cath Lab Technologists	383 
Aya Healthcare	419 	Cardiovascular Specialists	335 
Soliant Health	218 	Travel Echo Technicians	310 
Denver Health	200 	Cath Lab Technicians	269 
Nomad Health	186 	Echocardiographers	220 
St. Mary's Regional Medical Cen...	175 	Cardiovascular Sonographers	215 

Top Distinguishing Skills by Demand

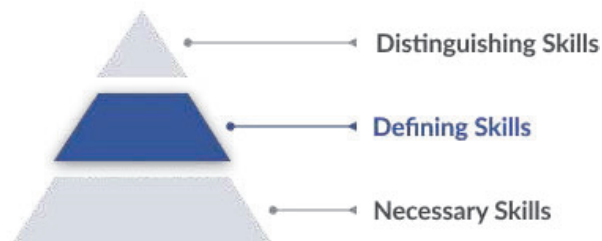
An occupation's Distinguishing Skills are the advanced skills that are called for occasionally. An employee with these skills is likely more specialized and able to differentiate themselves from others in the same role.



Skill	Salary Boosting	Job Postings Requesting	Projected Growth	Growth Relative to Market
Registered Vascular Technologist (RVT)	×	1,828	+7.7%	Stable
Registered Diagnostic Cardiac Sonographer (RDCS)	×	1,693	+5.7%	Stable
Echocardiography	×	1,230	+2.2%	Lagging
Image Quality	×	675	+5.4%	Stable
ARRT Sonography (S) Certification	×	583	+11.5%	Growing
Registered Cardiac Sonographer (RCS)	×	570	+0.5%	Lagging
Cardiac Surgery	×	540	+2.0%	Lagging
Artificial Cardiac Pacemakers	×	445	+3.4%	Lagging
Hemodynamics (Fluid Mechanics)	✓	440	+6.9%	Stable
Electroencephalography	×	359	+3.2%	Lagging

Top Defining Skills by Demand

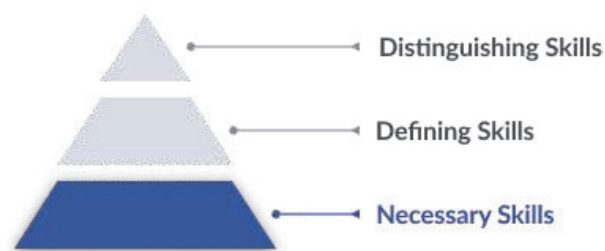
An occupation's Defining Skills represent the day-to-day tasks and responsibilities of the job. An employee needs these skills to qualify for and perform successfully in this occupation.



Skill	Salary Boosting	Job Postings Requesting	Projected Growth	Growth Relative to Market
Medical Ultrasonography	✓	5,954	+8.4%	Stable
Basic Life Support (BLS) Certification	✗	4,930	+13.9%	Growing
American Registry For Diagnostic Medical Sonography (ARDMS) Certification	✗	3,327	+8.1%	Stable
Radiology	✗	2,345	+9.6%	Growing
Registered Vascular Technologist (RVT)	✗	1,828	+7.7%	Stable
Registered Diagnostic Cardiac Sonographer (RDCS)	✗	1,693	+5.7%	Stable
Cath Lab	✓	1,656	+13.0%	Growing
Registered Diagnostic Medical Sonographer (RDMS)	✗	1,528	+8.2%	Stable
Obstetrics And Gynaecology	✗	1,277	+12.3%	Growing
Echocardiography	✗	1,230	+2.2%	Lagging

Top Necessary Skills by Demand

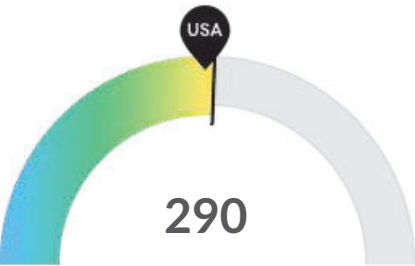
An occupation's Necessary Skills are the specialized skills required for that job and relevant across other similar jobs. An employee needs these skills as building blocks to perform the more complex Defining Skills.



Skill	Salary Boosting	Job Postings Requesting	Projected Growth	Growth Relative to Market
American Registry Of Radiologic Technologists (ARRT) Certified	×	2,025	+3.4%	Lagging
Anatomy	×	1,142	+14.2%	Growing
Advanced Cardiovascular Life Support (ACLS) Certification	×	1,088	+12.3%	Growing
Electrocardiography	×	1,007	+11.4%	Growing
Patient Positioning	×	911	+30.6%	Rapidly Growing
Nursing	×	702	+20.1%	Rapidly Growing
Patient Preparation	×	679	+15.8%	Growing
Registered Nurse (RN)	×	673	+18.1%	Growing
Pediatrics	×	602	+11.2%	Growing
Medical Records	×	522	+12.5%	Growing

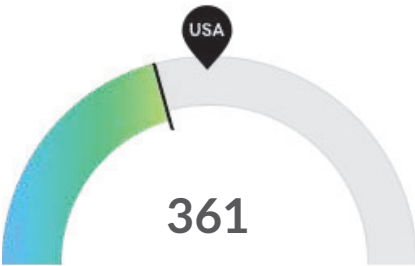
Demographics

Retirement Risk Is About Average, While Overall Diversity Is Low



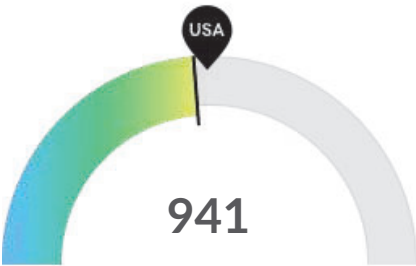
Retiring Soon

Retirement risk is about average in your area. The national average for an area this size is 280* employees 55 or older, while there are 290 here.



Racial Diversity

Racial diversity is low in your area. The national average for an area this size is 467* racially diverse employees, while there are 361 here.

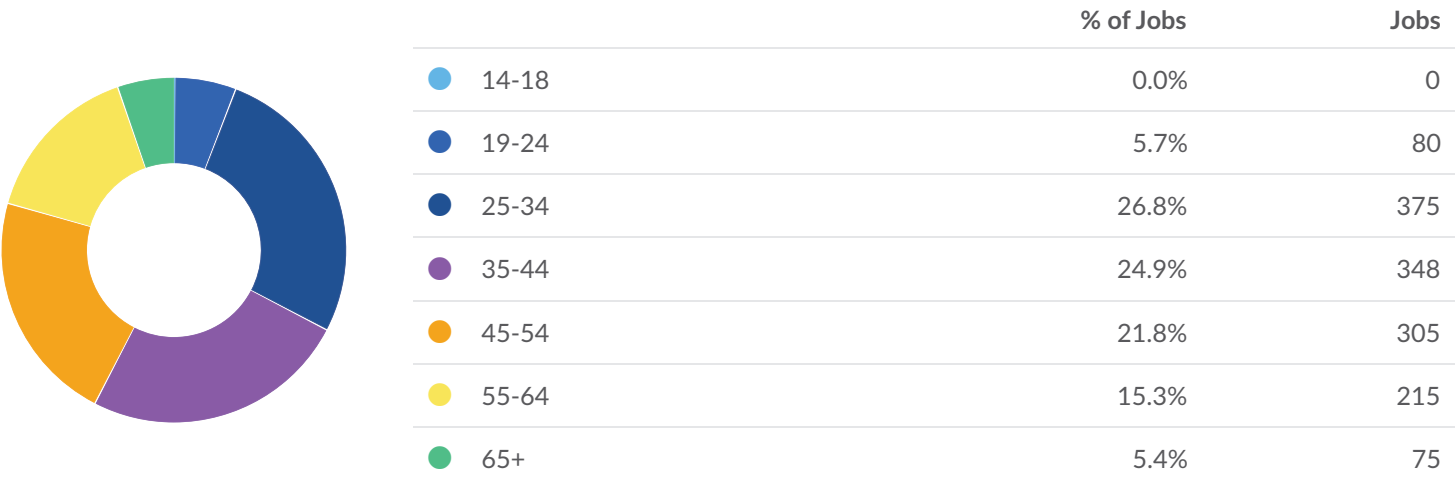


Gender Diversity

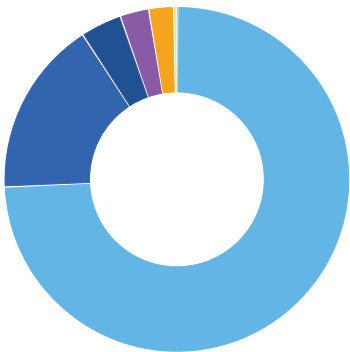
Gender diversity is about average in your area. The national average for an area this size is 1,010* female employees, while there are 941 here.

*National average values are derived by taking the national value for your occupations and scaling it down to account for the difference in overall workforce size between the nation and your area. In other words, the values represent the national average adjusted for region size.

Occupation Age Breakdown

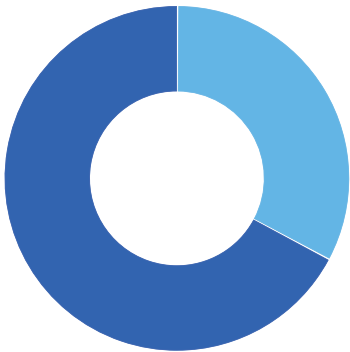


Occupation Race/Ethnicity Breakdown



	% of Jobs	Jobs
White	74.2%	1,038
Hispanic or Latino	16.5%	231
Asian	3.9%	54
Black or African American	2.7%	38
Two or More Races	2.3%	32
American Indian or Alaska Native	0.3%	4
Native Hawaiian or Other Pacific Islander	0.1%	1

Occupation Gender Breakdown



	% of Jobs	Jobs
Males	32.7%	458
Females	67.3%	941

Occupational Programs



3 Programs

Of the programs that can train for this job, 3 have produced completions in the last 5 years.



31 Completions (2023)

The completions from all regional institutions for all degree types.



93 Openings (2023)

The average number of openings for an occupation in the region is 277.

CIP Code	Top Programs	Completions (2023)	
51.0999	Allied Health Diagnostic, Intervention, and Treatment Profe...	20	<div></div>
51.0910	Diagnostic Medical Sonography/Sonographer and Ultrasou...	7	<div></div>
51.0901	Cardiovascular Technology/Technologist	4	<div></div>

Top Schools	Completions (2023)	
Community College of Denver	20	<div></div>
Red Rocks Community College	7	<div></div>
Concorde Career College-Aurora	4	<div></div>

Appendix A - Data Sources and Calculations

Location Quotient

Location quotient (LQ) is a way of quantifying how concentrated a particular industry, cluster, occupation, or demographic group is in a region as compared to the nation. It can reveal what makes a particular region unique in comparison to the national average.

Occupation Data

Emsi occupation employment data are based on final Emsi industry data and final Emsi staffing patterns. Wage estimates are based on Occupational Employment Statistics (QCEW and Non-QCEW Employees classes of worker) and the American Community Survey (Self-Employed and Extended Proprietors). Occupational wage estimates are also affected by county-level Emsi earnings by industry.

Staffing Patterns Data

The staffing pattern data in this report are compiled from several sources using a specialized process. For QCEW and Non-QCEW Employees classes of worker, sources include Occupational Employment Statistics, the National Industry-Occupation Employment Matrix, and the American Community Survey. For the Self-Employed and Extended Proprietors classes of worker, the primary source is the American Community Survey, with a small amount of information from Occupational Employment Statistics.

Cost of Living Data

Lightcast's cost of living data is based on the Cost of Living Index published by the Council for Community and Economic Research (C2ER).

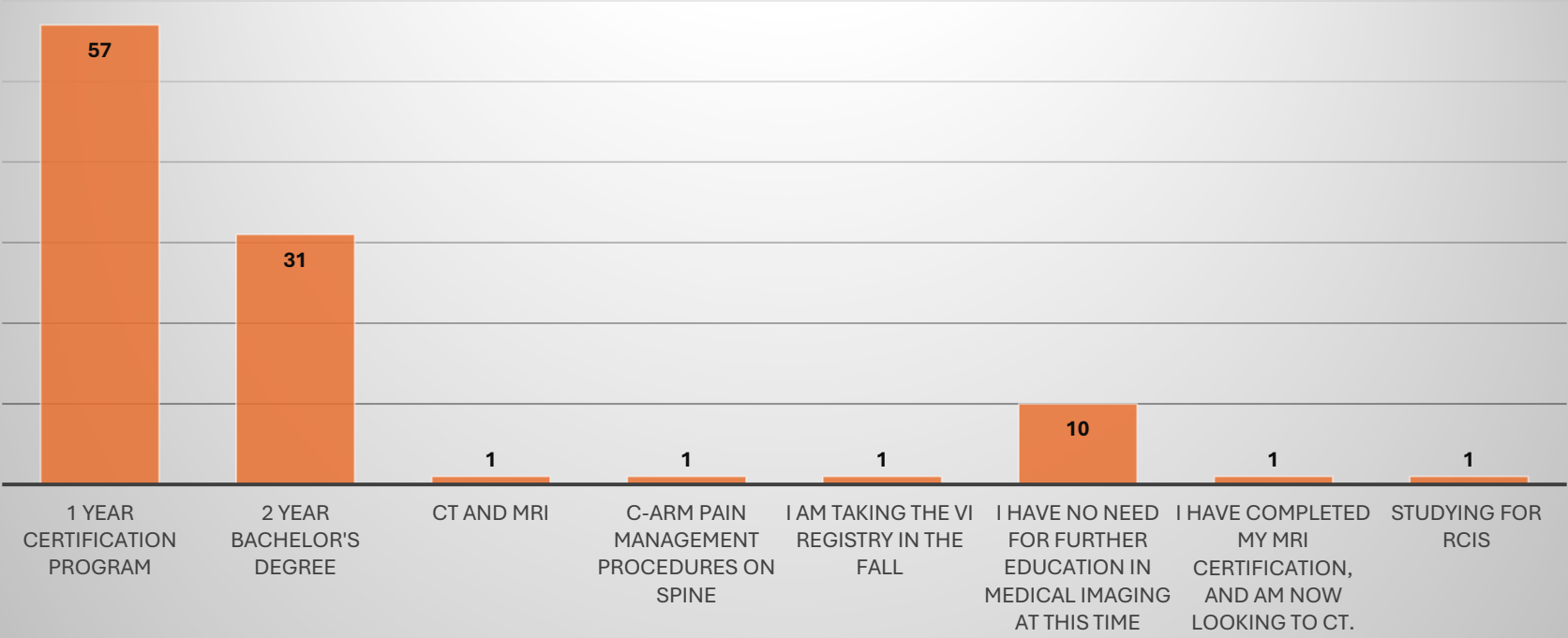
Lightcast Job Postings

Job postings are collected from various sources and processed/enriched to provide information such as standardized company name, occupation, skills, and geography.

Institution Data

The institution data in this report is taken directly from the national IPEDS database published by the U.S. Department of Education's National Center for Education Statistics.

Appendix B: Medical Imaging Survey



Appendix C: Curriculum

Degree **DMS BAS Degree (General)**
 Discipline: DMS Diagnostic Medical Sonography
 CHAIR: Martha Rivero
 CIP Current 51.091 Diagnostic Medical Sonography

Fall Semester I

Course	Title	Credits	Ratio	Contact Hrs
3221	Abd I	3	LLB	67.5
3222	Abd II	3	LLB	67.5
3223	Small Parts	2	LLB	45
3331	Ob/Gyn I	2	LLB	45
3000	Ultrasound Physics	3	Lect	67.5
3211	General Scan Lab	3	LB	90
	Total Credits	16		
Spring Semester I				
3332	Ob/Gyn II	3	LLB	67.5
3070	Clinical Observation	2	LB	90
3441	Abdomen Vascular	2	LLB	45
3442	Peripheral Vascular	2	LLB	45
3443	Cerebrovascular	2	LLB	45
3411	Vascular Lab	3	LB	90
	Total Credits	14		
Summer Semester I				
4071	Clinical I	6	CI	270
	Total SU I	6		
Fall Semester II				
4072	Clinical II	12	CI	540
	Total FA I	12		
Spring Semester II				
4073	Clinical III	12	CI	540
	Total DMS	60		

	Required Pre-Reqs			
DMS 1001	Intro to Sonography	2		
RTE 2055	Multiplanar sectional anatomy	2		
HPR 1040	Medical Terminology	3		
Mat 121	College Algebra	4		
BIO 1111	Gen College BIO w/ lab	5		
BIO 2201	Anatomy & Physiology I	4		
BIO 2202	Anatomy & Physiology II	4		
ENG 1021+	English I or Higher	3		
COM 1150+	Public speaking or Higher	3		
Physics 1105	Physics, Algebra Based	5		
	Total Minimum Pre- req Cr's	35		
	Total Pre+Program credits	95		
	Additonal credits from Associates degree*	25		
	Total	120		

Notes

*Additional Pre-req degree requirement

Program Length

2yr Associate's degree preferably in allied health or 2yr equivalent credits from university

21mths-Cohort would start Fall semseters

Degree: **Echocardiography BAS Degree**
 Discipline: DMS
 CHAIR: Martha Rivero
 CIP Current 51.091 Diagnostic Medical Sonography

Course	Title	Credits	Ratio	Contact Hours
DMS 3000	Ultrasound Physics	3	LLB	67.5
DMS 3551	Cardiac Anatomy	3	LLB	67.5
DMS 3552	Cardiac Physiology	3	LLB	67.5
DMS 3111	Echo Scan Lab I	5	Lab	150
	Total Credits FA:	14		
Spring Semester II				
Course	Title			
DMS 3112	Echo Scan Lab II	6	LB	180
DMS 3560	Echo Pathology	2	LLB	45
DMS 3080	Clinical Observation	2	CL	90
DMS 3555	Intro to Peds Echo	2	LLB	45
	Total Credits SP:	12		
Summer Semester I				
Course	Title			
DMS 4081	Echo Clinical I	6	CL	270
	Total Credits SU:	6		
Fall				
	Title			
DMS 4082	Echo Clinical II	12	CL	540
	Total	12		
Spring				
	Title			
DMS 4083	Clinical III	12	CL	540
	Total:	12		
	Total Echo only	56		

Required Pre-Reqs, same as general			Co Req course
DMS 1001	Intro to sonography	2	
RTE 2055	Multiplanar sectional anatomy	2	
HPR 1040	Medical Terminology	3	
Mat 121	College Algebra	4	
BIO 1111	Gen College BIO w/ lab	5	
BIO 2201	Anatomy & Physiology I	4	

BIO 2202	Anatomy & Physiology II	4
ENG 1021+	English I or higher	3
COM 1150+	Public Speaking or Higher	3
Physics 1105+	Physics I w lab, Algebra based	5
	Total Minimum Pre- req Cr's	35
	Total Pre+Program credits	91
	*Additional credits from Associates degree	29
	Total	120

Notes

Program Length 21mths-would start in Fall-Same as DMS General

*Degree requirement, 2yr Associate's degree preferably in allied health
or 2 year equivalent credits from university

Program Budget BAS-Sonography Degree Program

Cost analysis

	Year 1	Year 2	Year 3	Target
	FY2026	FY2027	FY2028	FY20??
Staffing FTE				
FT faculty	2	2	2	2
PT Instructor	0.533	4.2	4.2	4.2
Student FTE	16.5	33.0	36.9	52.0
Revenue				
Rates per credit hour				
Tuition per credit hour (300-400)	\$282.80	\$291.28	\$300.02	\$309.02
RRCC State Support (COF & FFS)	\$5,568.19	\$5,707.40	\$5,850.08	\$5,996.33
Course fee (avg/term)	\$1,274.80	\$1,300.30	\$1,326.30	\$1,352.83
Program revenue				
Tuition	\$140,265.97	\$288,371.16	\$331,818.91	\$482,076.19
RRCC State Support (COF & FFS)	\$92,058.92	\$188,344.09	\$215,669.11	\$311,809.36
Course fee	\$21,076.27	\$42,909.77	\$48,895.45	\$70,347.05
Total Revenue Earned	\$253,401.16	\$519,625.02	\$596,383.47	\$864,232.59
Estimated Expense				
FT Faculty	\$263,837.00	\$271,752.11	\$271,752.11	\$279,904.67
PT instructor	\$9,945.68	\$79,565.44	\$81,952.40	\$84,410.98
Hourly	\$79,532.00	\$81,917.96	\$84,375.50	\$86,906.76
Personnel	\$353,314.68	\$433,235.51	\$438,080.01	\$451,222.41
Operating	\$2,619	\$2,698	\$2,778	\$2,862
Subtotal	\$355,933.68	\$435,933.08	\$440,858.51	\$454,084.26
Indirect	\$314,985.56	\$385,781.49	\$390,140.27	\$401,844.48
Total Expense	\$670,919.24	\$821,714.57	\$830,998.78	\$855,928.75
Grand Total	(\$417,518.08)	(\$302,090)	(\$234,615.32)	\$8,303.85
Instructional Cost per FTE	\$21,528.68	\$13,210.09	\$11,958.40	\$8,732.39
Total Cost per FTE	\$40,580.61	\$24,900.44	\$22,541.06	\$16,460.17

Assumptions

3% annual tuition increase

2.5% annualy COF & FFS increase

2% annual course fee increase

3% annual pay increase

Indirect based on RRCC overal budget is 53% Direct Instruction & 47% Indirect

3% annual operating increase