CAREER & TECHNICAL EDUCATION

Workforce Trends & Careers of Tomorrow

RealTime Talent
Erin Olson, Director of Strategic Research
October 2021

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Who’s in the Virtual “Room”

In the chat field, please share your name, your role, and the organization that you represent.
CAREER & TECHNICAL EDUCATION BEYOND 2020

Workforce Trends & Careers of Tomorrow

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Overview

- Community Profile
- Workforce Forecast
- Mid-Term Occupational Impacts
- Career Field Insights

Access the full report here: http://www.realtimetalent.org
Community Profile

Population Race, All Ages

<table>
<thead>
<tr>
<th>Region</th>
<th>White</th>
<th>Black or African American</th>
<th>American Indian or Alaska Native</th>
<th>Asian</th>
<th>Native Hawaiian or Other Pacific Islander</th>
<th>Some Other Race</th>
<th>Two or More Races</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buffalo</td>
<td>97.5%</td>
<td>0.6%</td>
<td>0.1%</td>
<td>0.1%</td>
<td>0.1%</td>
<td>0.1%</td>
<td>0.1%</td>
</tr>
<tr>
<td>Elk River</td>
<td>91.6%</td>
<td>3.7%</td>
<td>0.1%</td>
<td>0.1%</td>
<td>0.1%</td>
<td>0.1%</td>
<td>0.1%</td>
</tr>
<tr>
<td>St. Cloud</td>
<td>88.5%</td>
<td>6.0%</td>
<td>0.1%</td>
<td>0.1%</td>
<td>0.1%</td>
<td>0.1%</td>
<td>0.1%</td>
</tr>
<tr>
<td>Central</td>
<td>92.2%</td>
<td>2.8%</td>
<td>0.1%</td>
<td>0.1%</td>
<td>0.1%</td>
<td>0.1%</td>
<td>0.1%</td>
</tr>
<tr>
<td>Minnesota</td>
<td>83.3%</td>
<td>6.2%</td>
<td>0.1%</td>
<td>0.1%</td>
<td>0.1%</td>
<td>0.1%</td>
<td>0.1%</td>
</tr>
</tbody>
</table>

# Community Profile

## Educational Attainment, Age 25-64

<table>
<thead>
<tr>
<th>Location</th>
<th>No High School Diploma</th>
<th>High School Graduate or GED</th>
<th>Some College, No Degree</th>
<th>Associate's Degree</th>
<th>Bachelor's Degree</th>
<th>Postgraduate Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buffalo</td>
<td>3.5%</td>
<td>26.3%</td>
<td>25.4%</td>
<td>12.7%</td>
<td>26.0%</td>
<td>6.2%</td>
</tr>
<tr>
<td>Elk River</td>
<td>4.0%</td>
<td>21.1%</td>
<td>26.1%</td>
<td>19.0%</td>
<td>22.4%</td>
<td>7.5%</td>
</tr>
<tr>
<td>St. Cloud</td>
<td>6.5%</td>
<td>24.8%</td>
<td>23.7%</td>
<td>16.4%</td>
<td>20.4%</td>
<td>8.2%</td>
</tr>
<tr>
<td>Central</td>
<td>5.6%</td>
<td>28.4%</td>
<td>24.6%</td>
<td>15.7%</td>
<td>18.5%</td>
<td>7.3%</td>
</tr>
<tr>
<td>Minnesota</td>
<td>6.1%</td>
<td>21.7%</td>
<td>21.0%</td>
<td>12.9%</td>
<td>25.6%</td>
<td>12.7%</td>
</tr>
</tbody>
</table>

**American Community Survey 2015-2019.**
Employment data are derived from the Quarterly Census of Employment and Wages, provided by the Bureau of Labor Statistics and imputed where necessary. Data are updated through 2020Q4 with preliminary estimates updated to 2021Q1.
Community Profile

Average Annual Wages for Central Minnesota

Source: BLS. Data as of 2021Q1. The shaded areas of the graph represent national recessions.

Annual average wages per worker data are derived from the Quarterly Census of Employment and Wages, provided by the Bureau of Labor Statistics and imputed where necessary. Data are updated through 2020Q4 with preliminary estimates updated to 2021Q1.
• Gross Regional Product (GRP) contracted -1.8%
• Manufacturing contributes most to GRP
Workforce of Today & Tomorrow Forecast

5-Year Forecast Comparison in Central Minnesota

- Historical
- Baseline
- COVID

Source: JobsEQB; Data as of 2021Q1
When you think about the current economic situation in your community, which of the following career fields do you feel has the most challenging or pressing workforce needs to be addressed right now? (select up to two)

1. Agriculture, Food, and Natural Resources
2. Arts, Communications, and Information Systems
3. Business, Management, and Administration
4. Engineering, Manufacturing, and Technology
5. Health Science Technology
6. Human Services
When you think about your local school, district, or consortium’s programming, how well do you feel current program offerings address your community’s **most challenging or pressing workforce needs** right now?

1. To a Great Extent
2. Somewhat
3. Very Little
4. Not at all
5. I do not know
Workforce of Today & Tomorrow

Forecast

Industry Clusters for Central Minnesota as of 2021Q1

Average Wages ($1,000s)

Average Annual Employment Forecast Rate(%) 2021Q1-2031Q1
Mid-Term Occupational Impacts

High Contact-Intensity Occupations

Diverging Mid-Term Impacts (greatest losses)
- Bartenders (-30.1%)
- Waiters and Waitresses (-29.1%)
- Supervisors of Food Preparation Workers (-14.5%)
- Passenger Vehicle Drivers (-14.0%)

Growth Among High Contact-Intensity Occupations
- Personal Care Aides (+3.4%)
- Medical Assistants (+2.9%)
- Physicians (+3.8%)

Average unemployment rate of 7.2% across all high contact-intensity roles.
Mid-Term Occupational Impacts

**Occupation Gaps**

COVID-19 has accelerated talent surplus anticipated in lower-wage, lower-education positions, particularly:

1) high contact-intensity occupations and
2) positions that cannot be done remotely.

---

**Average Annual Occupation Gaps (i.e. Talent Shortage), 2021Q1 through 2031Q1**

- Registered Nurses ($80,900)
- General and Operations Managers ($104,300)
- Software Developers and Software Quality Assurance Analysts and Testers ($98,600)
- Medical and Health Services Managers ($106,200)
- Project Management Specialists and Business Operations Specialists, All Other ($65,800)
- Nurse Practitioners ($115,000)
- Carpenters ($52,000)
- Construction Managers ($91,600)
- Financial Managers ($117,200)
- Substance Abuse, Behavioral Disorders, and Mental Health Counselors ($49,600)
- Food Preparation Workers ($28,900)
- Secretaries and Administrative Assistants, Except Legal, Medical, and Executive ($29,900)
- Farmworkers, Farm, Ranch, and Aquacultural Animals ($30,300)
- Office Clerks, General ($27,800)
- Customer Service Representatives ($37,700)
- Team Assemblers ($36,000)
- Waiters and Waitresses ($28,100)
- Retail Salespersons ($30,700)
- Fast Food and Courier Workers ($25,500)
- Cashiers ($25,700)
Emerging Career Paths

Top Emerging Occupations in Central Minnesota, March 1-August 31, 2021 compared to the same dates in 2020 (high-growth occupations by order of volume of postings)
1. Supervisors of Retail Sales Workers (+28%)
2. Light Truck or Delivery Services Drivers (+137%)
3. Nursing Assistants (+84%)
4. Licensed Practical and Licensed Vocational Nurses (+213%)
5. Hairdressers, Hairstylists, and Cosmetologists (+40%)

Top Sustaining Occupations in Central Minnesota September 2020 - 2021
1. Heavy and Tractor-Trailer Truck Drivers (+70%)
2. Registered Nurses (+51%)
3. Stock Clerks and Order Fillers (+52%)
4. Laborers and Freight, Stock, and Material Movers (+17%)
5. Customer Service Representatives (+21%)
Emerging Career Paths

Trends in Remote Work Opportunities Advertised Online, Central Minnesota 2021Q1

Change in Volume of Remote Work Opportunities
1. Customer Service Representatives (+205%)
2. Insurance Sales Agents (+97%)
3. Accountants and Auditors (+649%)
4. Bookkeeping, Accounting, and Auditing Clerks
5. Software Developers, Applications (+266%)

Chmura Economics JobsEQ, 2021Q1 dataset.
Shifting Opportunities

Baseline Worst-Case Scenario 10-Year Forecasts by Career Cluster, Central Minnesota 2021Q1

<table>
<thead>
<tr>
<th>Career Cluster</th>
<th>10 Year Forecast Growth Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture, Food &amp; Natural Resources</td>
<td>-1.0%</td>
</tr>
<tr>
<td>Architecture &amp; Construction</td>
<td>5.5%</td>
</tr>
<tr>
<td>Arts, A/V Technology &amp; Communications</td>
<td>-4.1%</td>
</tr>
<tr>
<td>Business, Management &amp; Administration</td>
<td>-2.0%</td>
</tr>
<tr>
<td>Education &amp; Training</td>
<td>4.2%</td>
</tr>
<tr>
<td>Finance</td>
<td>2.7%</td>
</tr>
<tr>
<td>Government &amp; Public Administration</td>
<td>4.4%</td>
</tr>
<tr>
<td>Health Science</td>
<td>10.0%</td>
</tr>
<tr>
<td>Hospitality &amp; Tourism</td>
<td>7.9%</td>
</tr>
<tr>
<td>Human Services</td>
<td>17.1%</td>
</tr>
<tr>
<td>Information Technology</td>
<td>6.9%</td>
</tr>
<tr>
<td>Law, Public Safety, Corrections &amp; Security</td>
<td>3.1%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>-1.5%</td>
</tr>
<tr>
<td>Marketing, Sales &amp; Service</td>
<td>-1.0%</td>
</tr>
<tr>
<td>Science, Technology, Engineering &amp; Mathematics</td>
<td>3.3%</td>
</tr>
<tr>
<td>Transportation, Distribution &amp; Logistics</td>
<td>2.4%</td>
</tr>
</tbody>
</table>

Central Minnesota
Career Field Analysis

Target Occupations
High wage (above regional average)
High-skill (require some credential)
High-demand (2/4 indicators: under 3% unempl, higher than average 5-year growth, total 5-year demand >50% of current empl, high job posting volume)
*Often also high occupation gap and award gap

Gateway Occupations
Mid-wage ($42,000 – regional average)
Low-middle skills (HS diploma, some OJT)
Sufficient demand (3-5% unemployment and/or high volumes of current opportunities)

Origin Occupations
Low wage (<$42,000/year)
Low skill (no credential)
Low demand (over 5% unemployment, low growth, low replacement demand, and/or low job postings)
Career Field Analysis

Occupation Characteristics for Consideration

• High-Wage: Paying above the area mean wage
• High-Skill: Requiring some form of credential
• High-Demand: 2/4 of the following requirements met:
  • Low unemployment
  • High volume of job postings in the past 3 months
  • Forecasted growth outpaces average regional forecasted growth
  • Forecasted total demand equal to or greater than 50% of total current employment
• Occupation Gaps
• Award Gaps
Baseline Worst-Case Scenario 3-Year Forecast for Health Science Technology Careers, Central Minnesota 2021Q1

- Historical
- Forecast

Chmura Economics JobsEQ, 2021Q1 dataset.
### Annual Average Occupation Gaps (i.e. Talent Shortages) for the next 10 Years in Health Science Technology, Central Minnesota 2021Q1

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Annual Average</th>
<th>Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registered Nurses</td>
<td>$80,900</td>
<td>-54</td>
</tr>
<tr>
<td>Medical and Health Services Managers</td>
<td>$105,200</td>
<td>-15</td>
</tr>
<tr>
<td>Nurse Practitioners</td>
<td>$115,000</td>
<td>-13</td>
</tr>
<tr>
<td>Licensed Practical and Licensed Vocational Nurses</td>
<td>$46,000</td>
<td>-11</td>
</tr>
<tr>
<td>Medical Assistants</td>
<td>$39,100</td>
<td>-8</td>
</tr>
<tr>
<td>Nursing Assistants</td>
<td>$33,400</td>
<td>-6</td>
</tr>
<tr>
<td>Physicians, Ai Other, and Ophthalmologists, Except Pediatric</td>
<td>$218,200</td>
<td>-6</td>
</tr>
<tr>
<td>Speech-Language Pathologists</td>
<td>$72,300</td>
<td>-5</td>
</tr>
<tr>
<td>Physician Assistants</td>
<td>$114,400</td>
<td>-5</td>
</tr>
<tr>
<td>Physical Therapists</td>
<td>$82,900</td>
<td>-5</td>
</tr>
<tr>
<td>Medical Technologist</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Registered Respiratory Therapist (RRT)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emergency Nursing Pediatric Course (ENPC)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trauma Nursing Core Course (TNCC)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Registered Veterinary Technician (RVT)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vascular Surgery</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Certification Gaps

- Licensed Practical Nurse (LPN)
- Basic Cardiac Life Support Certification (BCLS Certification)
- Pediatric Advanced Life Support (PALS)
- Registered Medical Assistant
- Medical Technologist (Medical Technologists)
- Registered Respiratory Therapist (RRT)
- Emergency Nursing Pediatric Course (ENPC)
- Trauma Nursing Core Course (TNCC)
- Registered Veterinary Technician (RVT)
- Vascular Surgery

Chmura Economics JobsEQ, 2021Q1 dataset.
Health Science Technology
Central MN, 2021Q1

Target Occupations (all HW, HD, HS)
- Registered Nurses (OG)
- Medical and Health Services Managers (OG, AG)
- Dental Hygienists (OG)
- Nurse Practitioners (OG, AG)
- Speech-Language Pathologists (OG)

Gateway Occupations
- Licensed Practical Nurses (HS, OG)
- Dental Assistants (HS, HD, OG, AG)
- Medical Dosimetrists (HS, OG)
- Occupational Therapy Assistants (HS, HD, OG, AG)
- Recreational Therapists (HS, AG)

Origin Occupations

**Likely**
- Nursing Assistants (HS, OG, AG)
- Home Health Aides (HD)
- Medical Secretaries (OG, AG)
- Medical Assistants (HS, HD, OG)
- Pharmacy Technicians (OG)

**Aligned**
- Personal Care Aides
- Childcare Workers
- Secretaries
- Cashiers
- Cooks
<table>
<thead>
<tr>
<th>SOC</th>
<th>Occupation</th>
<th>2021Q1 Empl</th>
<th>Mean Ann Wages²</th>
<th>High-Wage</th>
<th>High-Skill</th>
<th>High-Demand</th>
<th>OG</th>
<th>AG</th>
</tr>
</thead>
<tbody>
<tr>
<td>29-1141</td>
<td>Registered Nurses</td>
<td>6,252</td>
<td>$80,900</td>
<td>HW</td>
<td>HS</td>
<td>HD</td>
<td>OG</td>
<td>AG</td>
</tr>
<tr>
<td>11-9111</td>
<td>Medical and Health Services Managers</td>
<td>690</td>
<td>$105,200</td>
<td>HW</td>
<td>HS</td>
<td>HD</td>
<td>OG</td>
<td>AG</td>
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<tr>
<td>29-1292</td>
<td>Dental Hygienists</td>
<td>378</td>
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<td>HW</td>
<td>HS</td>
<td>HD</td>
<td>OG</td>
<td></td>
</tr>
<tr>
<td>29-1171</td>
<td>Nurse Practitioners</td>
<td>338</td>
<td>$115,000</td>
<td>HW</td>
<td>HS</td>
<td>HD</td>
<td>OG</td>
<td>AG</td>
</tr>
<tr>
<td>29-1127</td>
<td>Speech-Language Pathologists</td>
<td>275</td>
<td>$72,300</td>
<td>HW</td>
<td>HS</td>
<td>HD</td>
<td>OG</td>
<td></td>
</tr>
<tr>
<td>29-1122</td>
<td>Occupational Therapists</td>
<td>242</td>
<td>$75,700</td>
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<td>HS</td>
<td>HD</td>
<td>OG</td>
<td>AG</td>
</tr>
<tr>
<td>29-1126</td>
<td>Respiratory Therapists</td>
<td>236</td>
<td>$67,400</td>
<td>HW</td>
<td>HS</td>
<td>HD</td>
<td>OG</td>
<td>AG</td>
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<tr>
<td>29-1131</td>
<td>Veterinarians</td>
<td>208</td>
<td>$83,200</td>
<td>HW</td>
<td>HS</td>
<td>HD</td>
<td>OG</td>
<td>AG</td>
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<tr>
<td>29-1071</td>
<td>Physician Assistants</td>
<td>203</td>
<td>$114,400</td>
<td>HW</td>
<td>HS</td>
<td>HD</td>
<td>OG</td>
<td>AG</td>
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<tr>
<td>31-2021</td>
<td>Physical Therapist Assistants</td>
<td>138</td>
<td>$53,800</td>
<td>HW</td>
<td>HS</td>
<td>HD</td>
<td>OG</td>
<td></td>
</tr>
</tbody>
</table>
Baseline Worst-Case Scenario 3-Year Forecast for Human Services Careers, Central Minnesota 2021Q1

Human Services

Central Minnesota

Chmura Economics JobsEQ, 2021Q1 dataset.
Annual Average Occupation Gaps (i.e. Talent Shortages) for the next 10 Years in Human Services, Central Minnesota 2021Q1

- Substance Abuse, Behavioral Disorder, and Mental Health Counselors ($49,600)
- Secondary School Teachers, Except Special and Career/Technical Education ($60,700)
- Police and Sheriff's Patrol Officers ($67,900)
- Social and Community Service Managers ($73,700)
- Child, Family, and School Social Workers ($54,100)
- Court, Municipal, and License Clerks ($45,100)
- Firefighters ($38,700)
- First-Line Supervisors of Personal Service and Entertainment and Recreation Workers, Except Gambling Services ($43,400)
- Clergy ($50,000)
- Lawyers ($106,800)
- Legal Secretaries and Administrative Assistants ($45,100)
- Elementary School Teachers, Except Special Education ($58,600)
- Hairdressers, Hairstylists, and Cosmetologists ($31,500)
- Residential Advisors ($38,300)
- Exercise Trainers and Group Fitness Instructors ($42,900)
- Kindergarten Teachers, Except Special Education ($56,100)
- Security Guards ($35,600)
- Lifeguards, Ski Patrol, and Other Recreational Protective Service Workers ($23,700)
- School Bus Monitors and Protective Service Workers, All Other ($34,400)
- Childcare Workers ($26,100)

Certification Gaps

- Secret Clearance
- Basic Life Support (BLS)
- AFAA Personal Fitness Trainer
- Certified Alcohol and Drug Counselor (ADC)
- First Responder Certification
- Certified Protection Professional (CPP)
- Advanced Cardiac Life Support Certification (ACLS)
- Certified Diabetes Educator (CDE)
- Registered Professional Reporter (RPR)
- Certified Addictions Counselor (CAC)
Human Services
Central MN, 2021Q1

**Target Occupations** (all HW, HD, HS)
- Child, Family, & School Social Workers (OG, AG)
- K-12 Education Administrators (OG)
- Educational, Guidance, & Career Counselors (OG, AG)
- Social & Community Service Managers (OG, AG)
- Compliance Officers (OG)

**Gateway Occupations**
- Substance Abuse and Mental Health Counselors (HS, HD, OG, AG)
- Court, Municipal, and License Clerks (HD, OG)
- Correctional Officers and Jailers (AG)
- Clergy (HS, HD, OG, AG)
- Self-Enrichment Teachers (HD, AG)
- Supervisors of Personal Service and Recreation Workers (HD, OG, AG)

**Origin Occupations**

*Likely*
- Personal Care Aides (HD, AG)
- Teaching Assistants (HS, HD)
- Childcare Workers (HD, AG)
- Social and Human Service Assistants (HD)
- Preschool Teachers (HS, HD, OG)

*Aligned*
- Home Health Aides
- Medical Assistants
- Waiters and Waitresses
- Cashiers
- Cooks
### Top Ten Target Occupations in Human Services, Central Minnesota 2021Q1

<table>
<thead>
<tr>
<th>SOC</th>
<th>Occupation</th>
<th>2021Q1 Empl</th>
<th>Mean Ann Wages $</th>
<th>High-Wage</th>
<th>High-Skill</th>
<th>High-Demand</th>
<th>OG</th>
<th>AG</th>
</tr>
</thead>
<tbody>
<tr>
<td>21-1021</td>
<td>Child, Family, and School SocialWorkers</td>
<td>613</td>
<td>$54,100</td>
<td>HW</td>
<td>HS</td>
<td>HD</td>
<td>OG</td>
<td>AG</td>
</tr>
<tr>
<td>11-9032</td>
<td>Education Administrators, Kindergarten through Secondary</td>
<td>429</td>
<td>$105,000</td>
<td>HW</td>
<td>HS</td>
<td>HD</td>
<td>OG</td>
<td></td>
</tr>
<tr>
<td>21-1012</td>
<td>Educational, Guidance, and Career Counselors and Advisors</td>
<td>425</td>
<td>$57,700</td>
<td>HW</td>
<td>HS</td>
<td>HD</td>
<td>OG</td>
<td>AG</td>
</tr>
<tr>
<td>11-9151</td>
<td>Social and Community Service Managers</td>
<td>363</td>
<td>$73,700</td>
<td>HW</td>
<td>HS</td>
<td>HD</td>
<td>OG</td>
<td>AG</td>
</tr>
<tr>
<td>13-1041</td>
<td>Compliance Officers</td>
<td>353</td>
<td>$73,100</td>
<td>HW</td>
<td>HS</td>
<td>HD</td>
<td>OG</td>
<td></td>
</tr>
<tr>
<td>21-1022</td>
<td>Healthcare Social Workers</td>
<td>341</td>
<td>$51,800</td>
<td>HW</td>
<td>HS</td>
<td>HD</td>
<td>OG</td>
<td>AG</td>
</tr>
<tr>
<td>25-9031</td>
<td>Instructional Coordinators</td>
<td>307</td>
<td>$68,300</td>
<td>HW</td>
<td>HS</td>
<td>HD</td>
<td>OG</td>
<td>AG</td>
</tr>
<tr>
<td>21-2021</td>
<td>Directors, Religious Activities and Education</td>
<td>274</td>
<td>$64,500</td>
<td>HW</td>
<td>HS</td>
<td>HD</td>
<td>OG</td>
<td>AG</td>
</tr>
<tr>
<td>21-1023</td>
<td>Mental Health and Substance Abuse Social Workers</td>
<td>252</td>
<td>$59,600</td>
<td>HW</td>
<td>HS</td>
<td>HD</td>
<td>OG</td>
<td>AG</td>
</tr>
<tr>
<td>25-4022</td>
<td>Librarians and Media Collections Specialists</td>
<td>221</td>
<td>$57,300</td>
<td>HW</td>
<td>HS</td>
<td>HD</td>
<td>OG</td>
<td></td>
</tr>
</tbody>
</table>
Arts, Communications, & Information Systems

Baseline Worst-Case Scenario 3-Year Forecast for Arts, Communications, and Information Systems Careers, Central Minnesota 2021Q1

Chmura Economics JobsEQ, 2021Q1 dataset.
Arts, Communications, & Information Systems

Central MN, 2021Q1

**Origin Occupations**
- Print Binding and Finishing Workers
- Floral Designers
- Broadcast Announcers & Radio Disc Jockeys (HS)
- Actors (HS, HD)
- Entertainers and Performers (HD)

**Likely**
- Library Technicians
- Recreation Attendants
- Hosts and Hostesses
- Customer Service Reps
- Photo Process Machine Ops

**Aligned**
- Target Occupations (all HW, HD, HS)
- Software Developers (OG, AG)
- Writers and Authors
- Art Directors
- Information Security Analysts (OG, AG)
- Producers and Directors (OG, AG)

**Gateway Occupations**
- Graphic Designers (HS)
- Printing Press Operators
- Music Directors and Composers (HS, HD, OG, AG)
- Audio and Video Technicians (HS, HD, OG, AG)
- Prepress Technicians and Workers (HS)
### Top Ten Target Occupations in Arts, Communications, and Information Systems, Central Minnesota 2021Q1

<table>
<thead>
<tr>
<th>SOC</th>
<th>Occupation</th>
<th>2021Q1</th>
<th>Mean Ann Wages</th>
<th>High-Wage</th>
<th>High-Skill</th>
<th>High-Demand</th>
<th>OG</th>
<th>AG</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-1256</td>
<td>Software Developers and Software Quality Assurance Analysts and Testers</td>
<td>1,068</td>
<td>$88,600</td>
<td>HW</td>
<td>HS</td>
<td>HD</td>
<td>OG</td>
<td>AG</td>
</tr>
<tr>
<td>27-3043</td>
<td>Writers and Authors</td>
<td>145</td>
<td>$56,700</td>
<td>HW</td>
<td>HS</td>
<td>HD</td>
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<td></td>
</tr>
<tr>
<td>27-1011</td>
<td>Art Directors</td>
<td>114</td>
<td>$97,600</td>
<td>HW</td>
<td>HS</td>
<td>HD</td>
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</tr>
<tr>
<td>15-1212</td>
<td>Information Security Analysts</td>
<td>103</td>
<td>$89,200</td>
<td>HW</td>
<td>HS</td>
<td>HD</td>
<td>OG</td>
<td>AG</td>
</tr>
<tr>
<td>27-2012</td>
<td>Producers and Directors</td>
<td>93</td>
<td>$60,000</td>
<td>HW</td>
<td>HS</td>
<td>HD</td>
<td>OG</td>
<td>AG</td>
</tr>
<tr>
<td>27-1021</td>
<td>Commercial and Industrial Designers</td>
<td>76</td>
<td>$64,800</td>
<td>HW</td>
<td>HS</td>
<td>HD</td>
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</tr>
<tr>
<td>27-1014</td>
<td>Special Effects Artists and Animators</td>
<td>59</td>
<td>$58,300</td>
<td>HW</td>
<td>HS</td>
<td>HD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>27-1013</td>
<td>Fine Artists, Including Painters, Sculptors, and Illustrators</td>
<td>25</td>
<td>$60,300</td>
<td>HW</td>
<td>HS</td>
<td>HD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>27-1029</td>
<td>Designers, All Other</td>
<td>21</td>
<td>$62,100</td>
<td>HW</td>
<td>HS</td>
<td>HD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>27-1022</td>
<td>Fashion Designers</td>
<td>20</td>
<td>$64,300</td>
<td>HW</td>
<td>HS</td>
<td>HD</td>
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</tr>
</tbody>
</table>
Baseline Worst-Case Scenario 3-Year Forecast for Business, Management, and Administration Careers, Central Minnesota 2021Q1

Chmura Economics JobsEQ, 2021Q1 dataset.
### Business, Management, & Administration

#### Annual Average Occupation Gaps (i.e. Talent Shortages) for the next 10 Years in Business, Management, and Administration, Central Minnesota 2021Q1

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Gap 2021Q1</th>
<th>Gap 2022Q1</th>
<th>Gap 2023Q1</th>
<th>Gap 2024Q1</th>
<th>Gap 2025Q1</th>
<th>Gap 2026Q1</th>
<th>Gap 2027Q1</th>
<th>Gap 2028Q1</th>
<th>Gap 2029Q1</th>
<th>Gap 2030Q1</th>
</tr>
</thead>
<tbody>
<tr>
<td>General and Operations Managers</td>
<td>$104,300</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project Management Specialists and Business Operations Specialists, All Other</td>
<td>$65,800</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial Managers</td>
<td>$117,200</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accountants and Auditors</td>
<td>$67,600</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Market Research Analysts and Marketing Specialists</td>
<td>$62,900</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cooks, Restaurant</td>
<td>$30,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Management Analysts</td>
<td>$80,300</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products</td>
<td>$68,800</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Managers, All Other</td>
<td>$107,900</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Human Resources Specialists</td>
<td>$62,200</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Stockers and Order Fillers</td>
<td>$30,300</td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Bartenders</td>
<td>$26,300</td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Food Preparation Workers</td>
<td>$28,900</td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secretaries and Administrative Assistants, Except Legal, Medical, and Executive</td>
<td>$39,900</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Office Clerks, General</td>
<td>$37,800</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Customer Service Representatives</td>
<td>$37,700</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waiters and Waitresses</td>
<td>$28,100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retail Salespersons</td>
<td>$30,700</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fast Food and Counter Workers</td>
<td>$25,300</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Cashiers</td>
<td>$25,700</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Certification Gaps

- Certified Internal Auditor (CIA)
- Certified Public Accountant (CPA)
- Certified Professional Dog Trainer (CPDT)
- Basic Life Support (BLS)
- Class A Commercial Driver's License (CDL-A)
- Texas Alcoholic Beverage Commission Certification (TABC)
- Certified Facility Manager (CFM)
- Loss Prevention Qualified (LPQ)
- Class B Commercial Driver's License (CDL-B)
- Professional Certified Investigator (PCI)
### Business, Management, & Administration

Central MN, 2021Q1

#### Origin Occupations

<table>
<thead>
<tr>
<th>Likely</th>
<th>Aligned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cashiers</td>
<td>Personal Care Aides</td>
</tr>
<tr>
<td>Retail Salespersons (HD)</td>
<td>Eligibility Interviewers</td>
</tr>
<tr>
<td>Fast Food and Counter Workers (HD)</td>
<td>Childcare Workers</td>
</tr>
<tr>
<td>Office Clerks, General (AG)</td>
<td>Library Technicians</td>
</tr>
<tr>
<td>Stockers and Order Fillers (HD)</td>
<td></td>
</tr>
</tbody>
</table>

#### Gateway Occupations

- Supervisors of Retail Sales Workers (AG)
- Postal Service Mail Carriers
- Real Estate Sales Agents (OG)
- Loan Interviewers and Clerks (HD)
- Supervisors of Housekeepers and Janitorial Workers (HD, OG)

#### Target Occupations

(all HW, HD, HS)
- General and Operations Managers (OG, AG)
- Project Management Specialists (OG, AG)
- Accountants and Auditors (OG)
- Financial Managers (OG)
- Market Research Analysts & Marketing Specialists (OG)
## Top Ten Target Occupations in Business, Management, and Administration, Central Minnesota 2021Q1

<table>
<thead>
<tr>
<th>SOC</th>
<th>Occupation</th>
<th>2021Q1 Emp</th>
<th>Mean Ann Wages</th>
<th>High-Wage</th>
<th>High-Skill</th>
<th>High-Demand</th>
<th>OG</th>
<th>AG</th>
</tr>
</thead>
<tbody>
<tr>
<td>11-1021</td>
<td>General and Operations Managers</td>
<td>3,387</td>
<td>$104,300</td>
<td>HW</td>
<td>HS</td>
<td>HD</td>
<td>OG</td>
<td>AG</td>
</tr>
<tr>
<td>13-1198</td>
<td>Project Management Specialists and Business Operations Specialists, All Other</td>
<td>1,787</td>
<td>$65,800</td>
<td>HW</td>
<td>HS</td>
<td>HD</td>
<td>OG</td>
<td>AG</td>
</tr>
<tr>
<td>13-2011</td>
<td>Accountants and Auditors</td>
<td>1,762</td>
<td>$67,600</td>
<td>HW</td>
<td>HS</td>
<td>HD</td>
<td>OG</td>
<td></td>
</tr>
<tr>
<td>11-3031</td>
<td>Financial Managers</td>
<td>881</td>
<td>$117,200</td>
<td>HW</td>
<td>HS</td>
<td>HD</td>
<td>OG</td>
<td></td>
</tr>
<tr>
<td>13-1161</td>
<td>Market Research Analysts and Marketing Specialists</td>
<td>825</td>
<td>$62,900</td>
<td>HW</td>
<td>HS</td>
<td>HD</td>
<td>OG</td>
<td></td>
</tr>
<tr>
<td>11-2022</td>
<td>Sales Managers</td>
<td>664</td>
<td>$119,000</td>
<td>HW</td>
<td>HS</td>
<td>HD</td>
<td>OG</td>
<td>AG</td>
</tr>
<tr>
<td>41-3031</td>
<td>Securities, Commodities, and Financial Services Sales Agents</td>
<td>568</td>
<td>$79,800</td>
<td>HW</td>
<td>HS</td>
<td>HD</td>
<td>OG</td>
<td>AG</td>
</tr>
<tr>
<td>27-3031</td>
<td>Public Relations Specialists</td>
<td>334</td>
<td>$54,600</td>
<td>HW</td>
<td>HS</td>
<td>HD</td>
<td>OG</td>
<td></td>
</tr>
<tr>
<td>13-2052</td>
<td>Personal Financial Advisors</td>
<td>271</td>
<td>$131,200</td>
<td>HW</td>
<td>HS</td>
<td>HD</td>
<td>OG</td>
<td></td>
</tr>
<tr>
<td>11-3121</td>
<td>Human Resources Managers</td>
<td>246</td>
<td>$110,300</td>
<td>HW</td>
<td>HS</td>
<td>HD</td>
<td>OG</td>
<td>AG</td>
</tr>
</tbody>
</table>

Chmura Economics JobsEQ, 2021Q1 dataset.
Baseline Worst-Case Scenario 3-Year Forecast for Engineering, Manufacturing, and Technology Careers, Central Minnesota 2021Q1

3 Yrs Ago
74,606

Current
72,813

Chmura Economics JobsEQ, 2021Q1 dataset.
Engineering, Manufacturing, & Technology

Annual Average Occupation Gaps (i.e. Talent Shortages) for the next 10 Years in Engineering, Manufacturing, and Technology, Central Minnesota 2021Q1

Certification Gaps

- Certified Welder
- Certified Flight Instructor (CFI)
- 40 hour HAZWOPER
- Transportation Worker Identification Credential (TWIC)
- Certified Purchasing Professional (CPP)
- Certified Quality Auditor (CQA)
- EPA Section 608 Certification (EPA 608)
- Certified Pesticide Applicator
- Six Sigma Green Belt Certification (SSGB)
- Certified Construction Manager (CCM)

Chmura Economics JobsEQ, 2021Q1 dataset.
## Engineering, Manufacturing, & Technology

Central MN, 2021Q1

<table>
<thead>
<tr>
<th>Origin Occupations</th>
<th>Likely</th>
<th>Aligned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laborers and Freight, Stock Movers</td>
<td>Parking Lot Attendants</td>
<td></td>
</tr>
<tr>
<td>Team Assemblers</td>
<td>Retail Sales Workers</td>
<td></td>
</tr>
<tr>
<td>Landscaping and Groundskeeping Workers (HD, AG)</td>
<td>Stockers and Order Fillers</td>
<td></td>
</tr>
<tr>
<td>Passenger Vehicle Drivers (HD, AG)</td>
<td>Janitors and Cleaners</td>
<td></td>
</tr>
<tr>
<td>Light Truck Drivers (AG)</td>
<td>Personal Services Managers</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gateway Occupations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heavy and Tractor-Trailer Truck Drivers (HS, OG, AG)</td>
</tr>
<tr>
<td>Construction Laborers</td>
</tr>
<tr>
<td>Maintenance and Repair Workers, General (HD, OG, AG)</td>
</tr>
<tr>
<td>Automotive Service Technicians and Mechanics (HS, AG)</td>
</tr>
<tr>
<td>Welders, Cutters, Solderers, and Brazers (HD, OG, AG)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Target Occupations (all HW, HD, HS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction Managers (OG, AG)</td>
</tr>
<tr>
<td>Industrial Engineers (OG, AG)</td>
</tr>
<tr>
<td>Cost Estimators (OG, AG)</td>
</tr>
<tr>
<td>Logisticians (OG, AG)</td>
</tr>
<tr>
<td>CNC Tool Programmers (OG)</td>
</tr>
</tbody>
</table>
### Top Target Occupations in Engineering, Manufacturing, and Technology, Central Minnesota 2021Q1

<table>
<thead>
<tr>
<th>SOC</th>
<th>Occupation</th>
<th>2021Q1 Empl</th>
<th>Mean Ann Wages$^2$</th>
<th>High-Wage</th>
<th>High-Skill</th>
<th>High-Demand</th>
<th>OG</th>
<th>AG</th>
</tr>
</thead>
<tbody>
<tr>
<td>11-9021</td>
<td>Construction Managers</td>
<td>1,071</td>
<td>$91,600</td>
<td>HW</td>
<td>HS</td>
<td>HD</td>
<td>OG</td>
<td>AG</td>
</tr>
<tr>
<td>17-2112</td>
<td>Industrial Engineers</td>
<td>660</td>
<td>$81,800</td>
<td>HW</td>
<td>HS</td>
<td>HD</td>
<td>OG</td>
<td>AG</td>
</tr>
<tr>
<td>13-1051</td>
<td>Cost Estimators</td>
<td>474</td>
<td>$64,400</td>
<td>HW</td>
<td>HS</td>
<td>HD</td>
<td>OG</td>
<td>AG</td>
</tr>
<tr>
<td>13-1081</td>
<td>Logisticians</td>
<td>192</td>
<td>$69,400</td>
<td>HW</td>
<td>HS</td>
<td>HD</td>
<td>OG</td>
<td>AG</td>
</tr>
<tr>
<td>51-9162</td>
<td>Computer Numerically Controlled Tool Programmers</td>
<td>131</td>
<td>$58,700</td>
<td>HW</td>
<td>HS</td>
<td>HD</td>
<td>OG</td>
<td>AG</td>
</tr>
<tr>
<td>27-1025</td>
<td>Interior Designers</td>
<td>99</td>
<td>$54,200</td>
<td>HW</td>
<td>HS</td>
<td>HD</td>
<td>AG</td>
<td></td>
</tr>
<tr>
<td>19-2041</td>
<td>Environmental Scientists and Specialists, Including Health</td>
<td>91</td>
<td>$72,700</td>
<td>HW</td>
<td>HS</td>
<td>HD</td>
<td>OG</td>
<td></td>
</tr>
<tr>
<td>49-9062</td>
<td>Medical Equipment Repairers</td>
<td>71</td>
<td>$57,400</td>
<td>HW</td>
<td>HS</td>
<td>HD</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Baseline Worst-Case Scenario 3-Year Forecast for Agriculture, Food, and Natural Resources Careers, Central Minnesota 2021Q1

Chmura Economics JobsEQ, 2021Q1 dataset.
Agriculture, Food, & Natural Resources

Annual Average Occupation Gaps (i.e. Talent Shortages) for the next 10 Years in Agriculture, Food, and Natural Resources, Central Minnesota 2021Q1

- Plumbers, Pipefitters, and Steamfitters ($68,200)
- First Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers ($50,000)
- Heating, Air Conditioning, and Refrigeration Mechanics and installers ($61,100)
- First Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors ($56,800)
- Veterinary Technologists and Technicians ($34,300)
- Veterinarians ($83,200)
- Environmental Scientists and Specialists, Including Health ($72,700)
- Urban and Regional Planners ($73,600)
- Telecommunications Line Installers and Repairers ($52,000)
- Wind Turbine Service Technicians ($58,100)
- Food Batchmakers ($34,400)
- Power Plant Operators ($86,100)
- Meat, Poultry, and Fish Cutters and Trimmers ($32,300)
- Bakers ($31,200)
- Nuclear Engineers ($111,700)
- Nuclear Technicians ($79,800)
- Nuclear Power Reactor Operators ($99,300)
- Farmers, Ranchers, and Other Agricultural Managers ($80,600)
- Farmworkers and Laborers, Crop, Nursery, and Greenhouse ($35,200)
- Farmworkers, Farm, Ranch, and Aquacultural Animals ($30,300)

Certification Gaps

- Registered Veterinary Technician (RVT)
- Certified Professional Dog Trainer (CPDT)
- EPA Section 608 Certification (EPA 608)
- Laboratory Animal Technician (LAT)
- Secret Clearance
- Six Sigma Green Belt Certification (SSGB)
- OSHA 10
- Cisco Certified Networking Technician (CCENT)
- Certified Welder
- Assistant Laboratory Animal Technician (ALAT)
### Agriculture, Food, & Natural Resources

**Central MN, 2021Q1**

#### Origin Occupations

** Likely**
- Landscaping and Groundskeeping Workers (HD, AG)
- Farmworkers, Farm, Ranch, and Aquacultural Animals
- Farmworkers and Crop Laborers (HD)
- Meat, Poultry, and Fish Cutters and Trimmers
- Food Batchmakers

** Aligned**
- Compliance Officers
- Laborers and Freight Movers
- Stockers and Order Fillers
- Cooks
- Customer Service Reps

#### Gateway Occupations

- Farm Equipment Mechanics and Service Technicians (AG)
- Chefs and Head Cooks (HD, AG)
- Tree Trimmers and Pruners
- Chemical Technicians (HS)
- Logging Equipment Operators (HD)
- Chemical and Plant System Operators (HD, AG)

#### Target Occupations

- Veterinarians (OG, AG)
- Environmental Scientists and Specialists (OG)
- Postsecondary Biological Science Teachers (OG)
- Wind Turbine Service Technicians (OG, AG)
- Food Scientists and Technologists (AG)
## Agriculture, Food, & Natural Resources

<table>
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</table>
Summary and Discussion
Discussion Question 1

What piece of the data surprised, inspired, validated, or challenged you?
Discussion Question 2

From your perspective, what are the most important considerations in these data for Career and Technical Education programs?
What is one barrier that you can help remove for BIPOC students?
What additional information will you seek out next?
What changes or evaluations to your program will you prioritize next as a result of this data?
Thank you!

If you have questions about this report, please contact:
Erin Olson, Director of Strategic Research,
erin@realtimetalentmn.org
Appendix