



NJ PATHWAYS
TO CAREER OPPORTUNITIES
Aligning Education to Build an Innovative Workforce

Thank you for joining us. Please take this time to mute yourself.



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TO CAREER OPPORTUNITIES
Aligning Education to Build an Innovative Workforce

YEAR 2 PROGRESS UPDATE

Center of Workforce Innovation for
Data & Computer Science



Catherine Starghill, Esq.

Vice President

*New Jersey Council of
County Colleges*

Executive Director

*New Jersey Community College
Consortium for Workforce &
Economic Development*

WELCOMING REMARKS



AGENDA

**Data & Computer Science
Pathway Projects Year 2
Update**

Q&A

Upcoming Events



Our Education Partners

- Camden County College
- County College of Morris
- Cherry Hill East High School
- Cherry Hill West High School
- Essex County College
- Georgian Court University
- Horizon AVL Esports Integration
- Hudson County Community College
- Kean University
- Middlesex County College
- Montclair State University
- Ocean County College
- Ramapo College of NJ
- Raritan Valley Community College
- Rowan College at Burlington County
- Rowan University
- Rutgers University, Camden
- Rutgers University
- Rutgers University, Newark
- The Salvation Army, Kroc Center Camden
- Sterling Regional High School
- Stockton University
- Volunteers of America, Delaware Valley
- West Side High School, Newark Board of Education



Center of Workforce Innovation for Data & Computer Science

Kelly Fitzpatrick, Lead Institution Representative
County College of Morris



Pilot Summer Institute for Data Science

Kelly Fitzpatrick, County College of Morris

Joe Diaco, Camden County College

EDUCATION PARTNERS:

**County College of
Morris**

**Camden County
College**

Pilot Summer Institute for Data Science

The Summer Institute for Data Science will provide high schools students with knowledge about data science as a growing field and discipline.

Four Main Goals:

- 1. High school students will gain exposure to data science terminology, techniques and technology**
- 2. High school students will gain an understanding of educational pathways in data science**
- 3. High school students will gain an understanding of career opportunities in data science**
- 4. Recruit students to community college data science courses, certificates and programs**

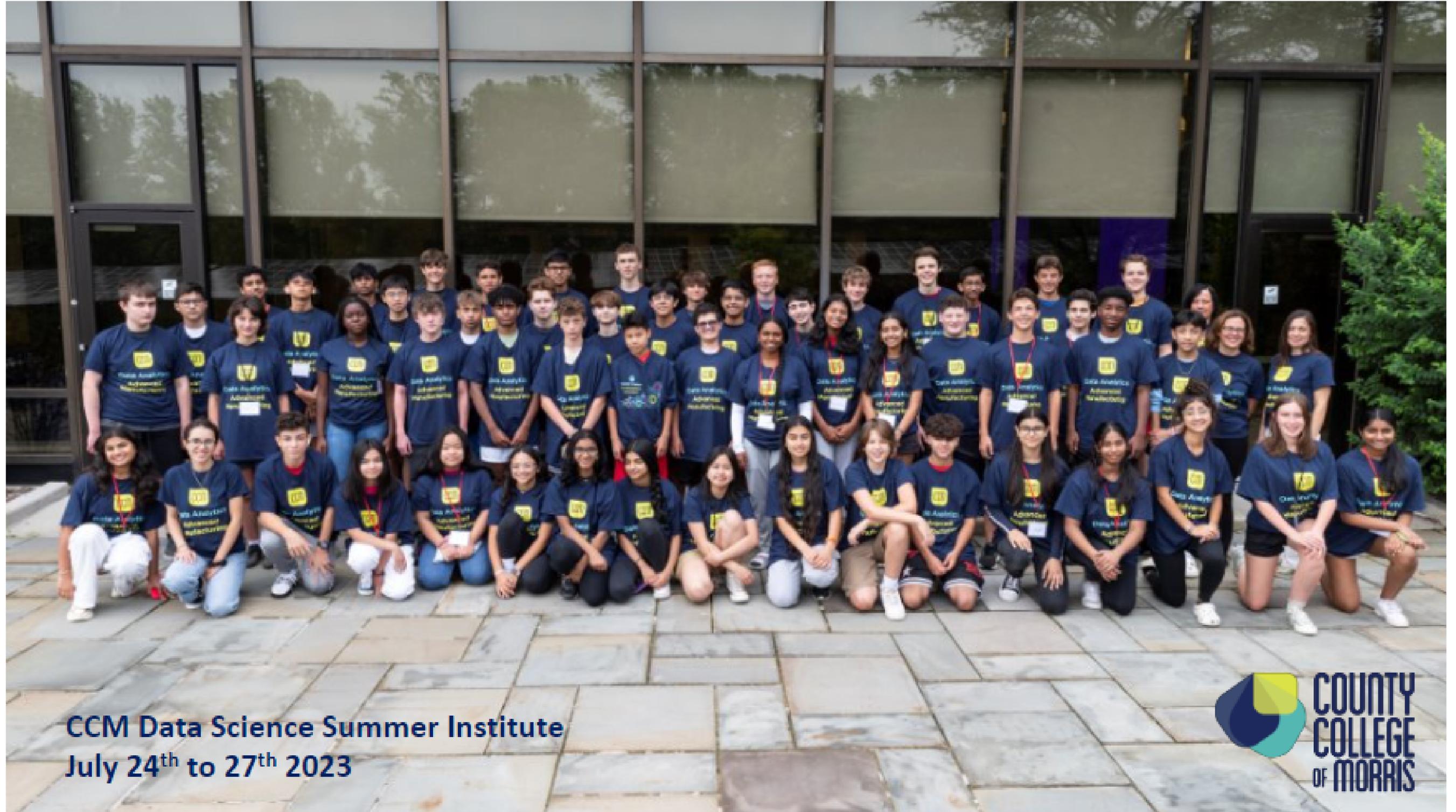
Research:

Summer programs are an effective mechanism for student on-ramping that can energize students to develop a passion for data science.

(National Academies of Sciences, Engineering and Medicine. (2018). Data Science for Undergraduates: Opportunities and Option (page 3-14 Summer Programs and Boot Camps))



Pilot Summer Institute for Data Science



CCM Data Science Summer Institute
July 24th to 27th 2023



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PLA for Apprenticeship RTI

PLA

Connection between Community Colleges (1+1)

Experiential Learning

Connection to CBOs

Adult Learners

Adult Literacy

Connection to 4-Yr College/University

Professional Development

Pilot

Pilot Summer Institute for Data Science

County College of Morris

July 23 - 27, 2023

Time	Session
9:00 to 9:30am	Welcome to Summer Institute for Data Science and Advanced Manufacturing Breakfast Coffee and Juice
9:30 to 12:30am WORKING SESSIONS For Data Science 40 Students Per Session	July 24th - Monday Google's Computers Are Making Thousands as Artists Learn to produce AI Artwork <i>Data Science & Analytics</i> <i>Yavasani, Chetan Moody's</i>
	July 25th - Tuesday Can you predict your musical preference? Prediction Models using Spotify
	July 26th - Wednesday Natural Language Processing in Python <i>Data Science & Analytics</i>
	July 27th - Thursday Data Visualization Using Tableau to build visualizations
12:30 to 1:00pm LUNCH AND LEARN	Admissions & General CCM Information Lunch / Snacks and Drinks

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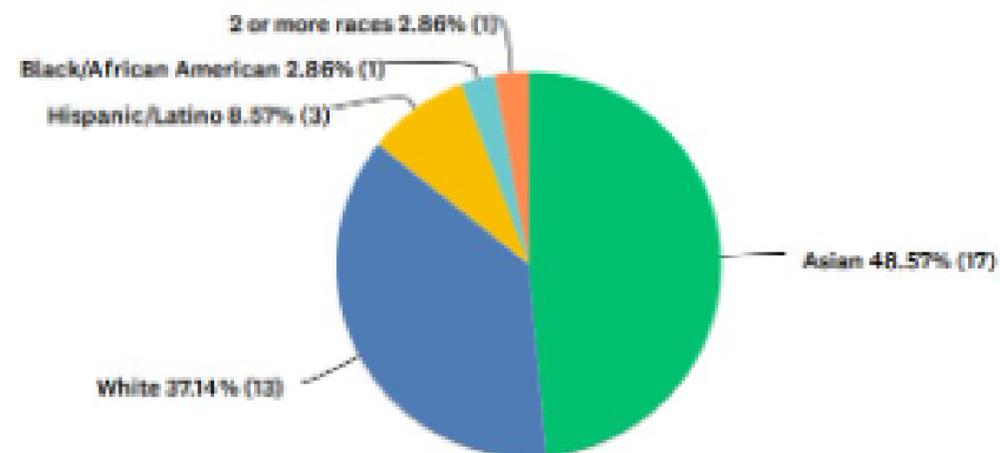
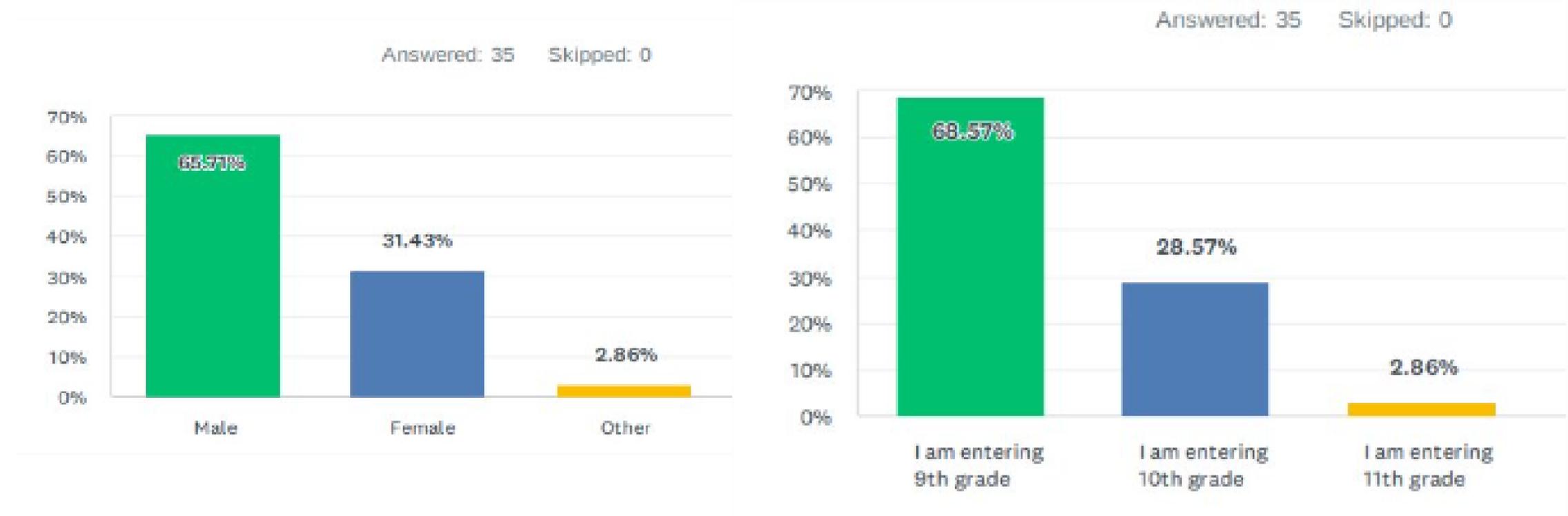
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Pilot Summer Institute for Data Science

Participants:



Pilot Summer Institute for Data Science

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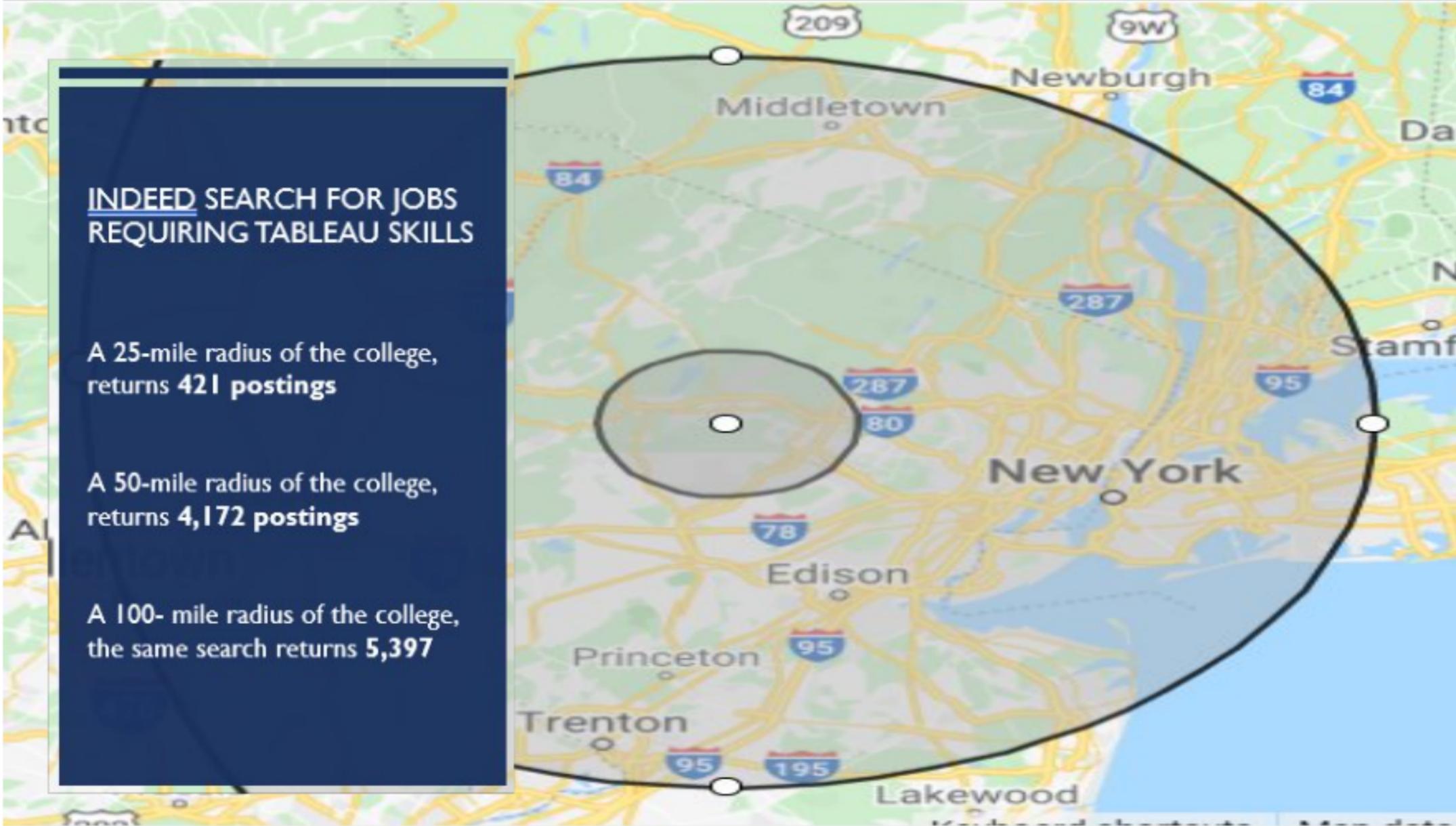
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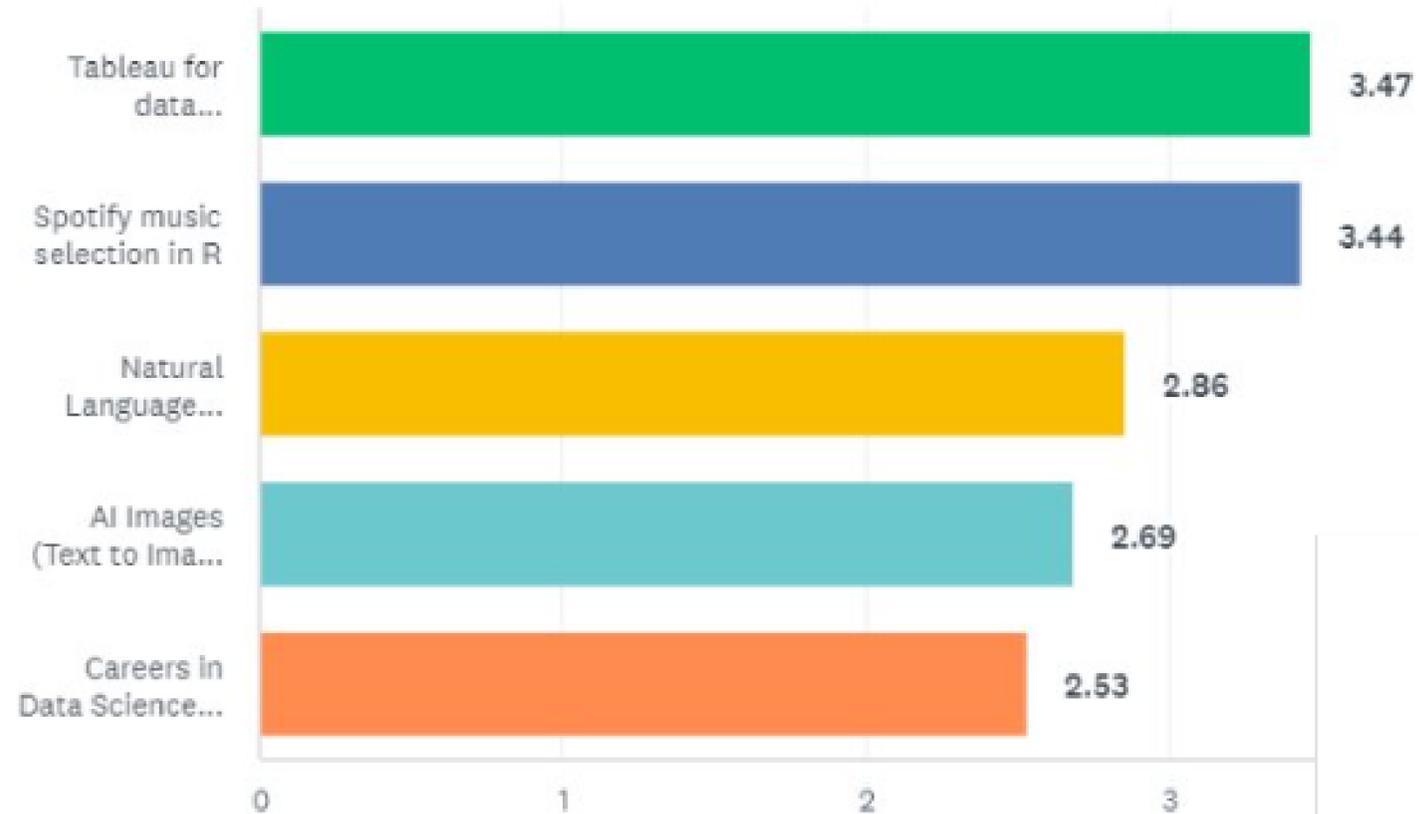
Professional Development

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Pilot Summer Institute for Data Science

Evaluation Results:

Answered: 36 Skipped: 0



4.3★

average rating



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Pilot Summer Institute for Data Science

Improvements:

- 1. Incorporate gamification (Kahoot) and more projects where students need to figure things out on their own.**
- 2. Divide students into teams to compete against each other for prizes / more interactive.**
- 3. Invite parents and high school teachers to breakfast info session on dual enrollment.**
- 4. Order more small and medium t-shirts.**
- 5. Allow more time for students to take the evaluation survey and review survey questions with them.**
- 6. For students that attend all four days hand out certificates of completion.**

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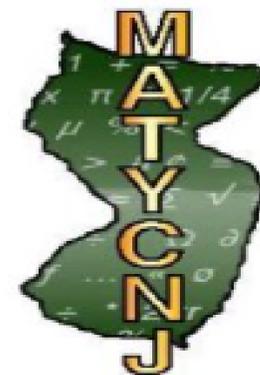
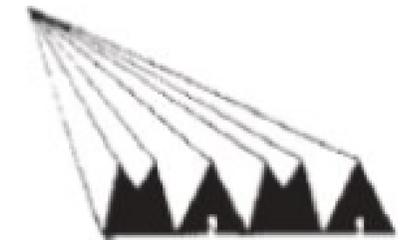
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Pilot Summer Institute for Data Science

Dissemination of Results:

Dissemination of results shared at the Morris Area Mathematics Alliance (MAMA) meeting held on Oct 19, 2023. The MAMA conference is hosted at CCM. Local area high school teachers across 10 different high schools attend. This is also an opportunity to highlight dual enrollment opportunities in Data Science.

Morris Area
Mathematics
Alliance



Fall 2023 MATYCNJ Meeting

Saturday, October 28, 2023; 9:30 am – 1:35pm
Sussex County Community College

Registration Link: <https://forms.gle/9wtxdA2wyXTFhdVv8>

AGENDA

If you have further questions about Data Science Summer Institute,
email : kfitzpatrick@ccm.edu

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Pilot Summer Institute for Data Science

Camden County College

July 22 - 25, 2024

Secured necessary rooms to accommodate 48 students with the ability to expand up to 72 students. Breakfast and lunch are included for all students.

Daily agendas/schedules have been built.

Communications department is developing:

- **Digital recruitment flyer**
- **Online registration page**
- **Program t-shirt design**

Invited students from Camden County Technical Schools, Cherry Hill East, and Voorhees Middle School.



The NJ Cyber Pathways to Cloud Computing

Sylvia Riviello, Ocean County College

Mutasem Awwad, Raritan Valley Community College

Edem Tetteh, Rowan College at Burlington County

EDUCATION PARTNERS:

**Ocean County
College**

**Raritan Valley
Community College**

**Rowan College at
Burlington County**

The NJ Cyber Pathways to Cloud Computing

The NJ Cyber Pathways to Cloud Computing project includes the development of two Cybersecurity certificate programs using three modalities: face-to-face, HyFlex, and asynchronous online instructional delivery that utilizes a secured document repository shared amongst the three partner institutions.

Courses in the certificate program are aligned to both industry-recognized certification standards and to the Workforce Framework for Cybersecurity (NICE Framework) in preparation to develop Centers of Excellence.

Each course completed will be transferrable between the partner colleges. This enables students enrolled in any of the partner colleges to complete these courses at any of the three colleges and seamlessly transfer the credits to their home institution.



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The NJ Cyber Pathways to Cloud Computing

Ten 3-credit courses were developed for online, onsite and Hyflex Modalities:

Required Courses with the Associated Credential

- **CyberOps Associate --> Cisco CyberOps Associate Credential**
- **Computer Hardware and Software --> CompTIA A+**
- **Ethical Hacking and Penetration Testing --> Certified Ethical Hacker**
- **Information Security Fundamentals --> CompTIA Security+**
- **Linux Fundamentals --> CompTIA Linux+**
- **Networking Essentials --> CompTIA Network+**

Pathway 1: Cloud Computing and Forensic Certificate

- **System Administration and Cloud Computing --> MicrosoftAZ800**
- **Privacy, Ethics and Forensics --> Digital Forensic**

Pathway 2: Cyber Healthcare and Compliance Certificate

- **Cyber Healthcare and Compliance --> HCISPP Credential**
- **Cybersecurity Legal and Regulatory Compliance --> CGRC Credential**

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The NJ Cyber Pathways to Cloud Computing

Ancillary Activities:

Rowan College at Burlington County (RCBC) is currently working to bring technical education to high schools through the PTECH program, dual enrollment, grant opportunities, and scholarships. RCBC recently completed the quick step program which allowed high schools to learn and complete CompTIA ITF and Network + certifications.

Ocean County College is currently working with several Ocean County high schools offering the Cybersecurity program as part of their evening school starting Summer 2024. The Cybersecurity program is scheduled to begin in Fall 2024 at Barnegat Bay High School for dual enrollment.

Raritan Valley Community College signed an agreement with Hunterdon County Vocational school (HVCS). HVCS students can earn up to two - 3 college credit courses. The courses are Desktop computer Hardware and Software and Networking Essentials.

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The NJ Cyber Pathways to Cloud Computing

Ancillary Activities:

Raritan Valley Community College (RVCC) is collaborating with Rowan College at Burlington County (RCBC) --> 3+1 AAS Computer Networks / Cybersecurity at RVCC to BA in Computing and Informatics at Rowan University.

RCBC currently has 3 +1 articulation agreement with Rowan University for the BA Computing Informatics and 2 + 2 articulation agreements with Wilmington University in Computer and Network Security.

Ocean County College (OCC) completing 3 +1 and 2 +2 articulation with Rowan University BA Computing and Informatics.

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The NJ Cyber Pathways to Cloud Computing

Adult Learners can earn credit for up to two college courses. Upon completion of equivalent courses to Raritan Valley Community College's (RVCC) Computer Hardware and Software and Networking Essentials adult learners will receive credit waivers for each completed class, which can be applied towards their enrollment at RVCC.

Ocean County College (OCC) engaged in a market research needs assessment summary for Adult Learners through the Hanover Research Company. Based on an analysis of demographics and labor market trends and a review of academic program demand, Hanover recommends that OCC should:

- Increase and expand program marketing to include adult workers in counties south of Ocean County.**
- Develop and expand promising programs in healthcare, vocational and cosmetology fields leading to high-wage, high-demand occupations.**

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The NJ Cyber Pathways to Cloud Computing

- **Raritan Valley Community College: Amazon Web Services (AWS) Training Architecting on AWS training by TechReform and completed with participation from three faculty members.**
- **Rowan College at Burlington County: CompTIA Network+ Course completed by a faculty member pending the completion of industry credential exams.**
- **Raritan Valley Community College and Ocean County College: Cisco and COMPTIA training required credentials listed in slide attending summer conferences through fall 2024.**
- **Ocean County College: Cyber Healthcare and Compliance completed by faculty member to receive HCISPP Credential.**
- **Ocean County College: Cybersecurity Legal and Regulatory Compliance by faculty member to CGRC Credential.**

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- **Raritan Valley Community College: piloting two online courses --> Networking Essentials and Security Fundamentals courses will be offered Summer 2024 in online mode.**
- **Rowan College at Burlington County: Piloting three online courses in the summer of 2024 and additional courses in the fall of 2024**
- **Ocean County College: Piloting three Hyflex and face to face courses: Cyber Legal and Regulatory Compliance, Cyber Healthcare and Compliance, CyberOps Associate planned to be offered Summer 2024 and Fall 2024**

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The NJ Cyber Pathways to Cloud Computing

Challenges:

- **Limited capacity of three full-time computing faculty members at RCBC to create and present curriculum.**
- **Gaining college-approval for proposed professional development opportunities has proven difficult.**
- **Delays in institutional processes may impact the project's outcome.**
- **A setback occurred during the presentation of certificates and new courses at the Instructional Affairs Council (IAC) meeting in February, leading to necessary revisions before a March re-presentation.**
- **One of the biggest challenge encountered is the time it takes for all parties to execute the articulations.**



FLIGHT DIRECTOR



Bloomberg Fintech

Mitra Choudhury, Essex County College

Germaine Albuquerque, Essex County College

EDUCATION PARTNERS:

**Essex County
College**

**West Side High
School – Newark
Board of Education**

**Rutgers University,
Newark**

Bloomberg Fintech

Bloomberg connects students and faculty across multiple disciplines to the world's leading business and financial information network. To empower our students with the hands-on knowledge and real-world experience that they will need to compete in today's job market, Essex County College is developing the following:

- A scalable Pilot program for 20 students using Bloomberg Terminals as an Experiential Learning model across several majors providing real world experience in a simulated setting with the opportunity to complete all eight modules and earn a BMC certificate.**
- Scaling up Bloomberg course work by providing select speakers to talk about different business topics including Fintech.**
- Establishing 8 Bloomberg Terminals at the branch campus.**
- Bloomberg Global Training Challenge with participants/students across the world.**



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Bloomberg Fintech

Project Progress:

- **Essex County College's (ECC) Business Division is offering BMC (Bloomberg Market Concepts) prep sessions. Certifications are in ECO 101 and ECO 102 where they have the opportunity to complete all eight modules. Students in Level 200 courses are encouraged to do their projects using the Bloomberg Terminals.**
- **West Side High School seniors enrolled in ECO 102 will also have the opportunity to receive Bloomberg Certifications.**
- **Anticipated completion of BMC modules and receiving certification: April – May 2024.**
- **Scaling up Bloomberg course work by providing select speakers monthly to present different business topics including Fintech.**
- **ECC had three teams participate in the 2023 Bloomberg Global Trading Challenge which attracted over 2,000 teams from around the world. Students had the opportunity to visit Bloomberg L.P. headquarters in New York City at the end of the competition.**

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Bloomberg Fintech

Ribbon Cutting Ceremony Bloomberg Lab West Essex





Discovering the Power of Data

Joe Diaco, Camden County College

EDUCATION PARTNERS:

**Camden County
College**

**County College of
Morris**

**Middlesex County
College**

Discovering the Power of Data

The Discovering the Power of Data project is designed to motivate and engage high school students to consider data science/analytics as a career path. The project includes two major components: delivering a “Power of Data” presentation to a minimum of 1 high school per community college during Spring 2024 as well as providing 3 fundamental data science dual enrollment courses to attain industry credentials. Courses will be piloted in a minimum of 3 high schools during Academic Year 2024-2025.

Community Colleges involved in this project will curate/create comprehensive content including lesson plans, lectures, and exercises for three 1-year high school turnkey dual enrollment courses in Data Literacy, Introduction to Data Science, and Introductory Python Programming. Each high school can choose to offer these courses in the modality most suited to their needs.



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Discovering the Power of Data

Activities include:

- **Creating new courses or modifying existing courses to ensure uniformity among the three partner schools.**
- **Building-out the courses, i.e., creating lesson plans, exercises, and projects.**
- **Creating mini-presentations to attract high school participation.**
- **Training interested high school faculty.**

Completed courses will be accessible through a repository in addition to professional development training for high school faculty. One or more courses will be piloted in at least three high schools, depending upon each high school's curriculum. We expect to pilot in Fall 2024.

Challenges:

- **Content agreement.**
- **Lack of relevant texts.**
- **Creating the Data Literacy course.**
- **Flexibility within high school curricula.**
- **Differences in meeting times and course length.**
- **Differences in hardware.**

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Discovering the Power of Data

Ancillary outcomes:

- **Collegiality and Scalability**
- **Delivery and Management**
- **Standardized file naming conventions.**
- **Possibly authoring a data literacy text.**

Words of advice:

- **Prepare for an enormous amount of work.**
- **Set attainable goals.**
- **Mindfulness.**
- **Seek new tools.**
- **Team up members with different backgrounds.**
- **Be open to new ideas.**



Precision Agriculture Using AI Drones

Joe Diaco, Camden County College

EDUCATION PARTNERS:

**Camden County College
Rowan University**

INDUSTRY PARTNERS:

**DiMatteo Farm
(Hammonton)**

**Macrie Farm
(Hammonton)**

**Matro Farm
(Hammonton)**

**Piney Hollow Farm
(Williamstown)**

**Vaccarella Farm
(Hammonton)**

**Influential Drones
(Marlton)**

Precision Agriculture Using AI Drones

The Precision Agriculture Using AI Drones projects forges bonds between two-year and four-year institutions, connects with industry, and provides experiential learning opportunities for students.

Camden County College is collaborating with Rowan University on a precision agriculture research project aimed at developing AI models based on deep learning to estimate crop yield and detect disease from aerial images of blueberry bushes using autonomous drones and computer vision.

Community college students performing undergraduate research throughout the academic year and summer under the joint tutelage of two-year and four-year faculty while engaging with industry professionals is a rare and advantageous opportunity.



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Precision Agriculture Using AI Drones

This project runs through July. The following will be achieved:

- **AI model trained by students for detecting blueberries.**
- **AI model trained by students for detecting blueberry scorch virus.**
- **Two programmable drones built by students.**
- **Tutorials to train students on deep learning and drone programming (Google presentations and Zoom recordings).**

Collaborative research:

- **Students learned about the data science pipeline: data collection, augmentation, training, validation.**
- **Students gained experience collaborating as a team and improved their communication skills.**
- **Provided students with hands-on experience in doing research in data science with an emphasis on Machine Learning topics.**

Challenges:

- **Lack of programming skills.**
- **The project involves hardware modification.**
- **Students falling behind in their tasks.**
- **Software issues.**

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Precision Agriculture Using AI Drones

Ancillary outcomes:

- **Midyear student survey results.**
- **Possibly expanding the project to include mapping blueberry fields.**

Words of advice:

- **Seek support from your administration: space for in-person meeting, storage, computer lab, etc.**
- **Communication: on a collaborative project, finding a common time to meet for everyone is tough, especially for the students. We found meeting virtually and meeting on Fridays or the weekend to be our best options.**
- **Recruiting students is the key. Talk to other faculty members to locate the best students to work on the project.**
- **Purchase any equipment needed, e.g., drone kits, laptops, etc. early to keep the project on track.**

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Pilot

Precision Agriculture Using AI Drones





Esports Production – Content Creation Hub Pathway Pilot

David Bruno, Camden County College

EDUCATION PARTNERS:

Camden County College

**Cherry Hill East High
School**

**Cherry Hill West High
School**

**Sterling Regional High
School**

Stockton University

**Rutgers University -
Camden**

**The Salvation Army -
Kroc Center**

**Camden
Volunteers of America -
Delaware Valley**

**Horizon AVL Esports
Integration**

Esports Production – Content Creation Hub Pathway Pilot

A new esports career pathway – Esports Production: Content Creation – requires academic programming that has a variety of entry and exit points with career opportunities and advancement opportunities that lead to sustainable wages available to participants as they navigate the pathway.

These pathways will align with supporting local emerging industries, including cybersecurity, data science, and video/audio production, including film and television production.

The pilot project will map prior learning assessments and align key skills to esports-related industry standards, including transferable skills in audio and video production. Horizon AVL Esports Integration has identified the industry credentials, and they have already been embedded into the existing Esports Production AAS degree at Camden County College.

The project will work with the secondary and post-secondary institutions to embed and map those industry standards into the esports-related curricula during the span of the project, and it will also allow for this pathway to become the standard for other NJ Community Colleges to use and scale as needed.

PATHWAY CONNECTIONS:

Big Idea Different than the Work Done in Year 1

Connection to High School (Non-Credit)

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Community College (Credit)

Apprenticeship Development

PLA for Apprenticeship RTI

PLA

Connection between Community Colleges (1+1)

Experiential Learning

Connection to CBOs

Adult Learners

Adult Literacy

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Pilot

Esports Production – Content Creation Hub Pathway Pilot

Ancillary outcomes:

Creation of the “GSE SJ Intercollegiate Cup” – the first in-person intercollegiate esports league in the nation.

- **5 Colleges/Universities:**

- **Camden County College**
- **Brookdale Community College**
- **Stockton University**
- **Rutgers University-Camden**
- **Rowan University**

- **4 locations:**

- **Camden County College**
- **Stockton University**
- **Brookdale Community College**
- **Finals TBD**

- **Collaboration - Horizon AVL Esports Integration and Garden State Esports**

- **Emphasis on “Production” and “Content Creation”**

- **Local High Schools attending and working together with colleges and industry to assist.**

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Esports Production – Content Creation Hub Pathway Pilot

Establish and align industry standards as connected to esports production and content creation to identify opportunities to embed these credentials in both credit and non-credit coursework.

- **Certifications/Credentialing – In Progress**
- **Adobe Certification – Illustrator, Photoshop, Premiere**
- **Industry – Career Technical Specialist for Audio/Visual**
- **Industry – Unreal Engine**
- **IT - CompTIA**
- **Credit Courses – Completed**
- **COM-213: Multimedia Editing**
- **Non-Credit Courses – In Progress**
- **Streaming for Beginners**
- **Build Your Own Gaming PC**

Ancillary outcomes:

Direct application to the Film & Television Industries

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Esports Production – Content Creation Hub Pathway Pilot

Working with four-year partners to begin alignment and articulation agreement discussions for the ESP.AAS degree with both Rutgers University-Camden and Stockton University. These early discussions during the development phase ensures the transferability of courses.

Status:

Stockton University – Complete

Rutgers University-Camden: In progress through Digital Studies Degree

Challenges:

Speed of implementation and shared visions.

Ancillary outcomes:

Preliminary discussions with Rowan University regarding alignment with degree and certificate options at both College of Communication and Creative Arts (BA in Sports Communication and Media) & School of Professional Studies (Esports Business Certificate of Undergraduate Study).

Words of advice:

The approval process takes an extremely long time.

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Esports Production – Content Creation Hub Pathway Pilot

Camden County College will work with other NJ community colleges to establish pathways and curriculum mapping.

Challenges:

Not all community colleges see esports in the same way.

Ancillary outcomes:

Creation of the “GSE SJ Intercollegiate Cup” – the first in-person intercollegiate esports league in the nation

Words of advice:

- **Institutional commitment to esports through academics, not just athletics or student life.**
- **Camden County College will share esports production curricula and pathways across the state, including the sharing of relevant course descriptions and learning outcomes.**
 - **Brookdale Community College**

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Esports Production – Content Creation Hub Pathway Pilot

Identify entry points into the esports program for high school graduates immediately upon high school completion by seeking dual enrollment opportunities for these esports-related CTE courses: COM-213: Multimedia Editing Lab (3 credits) MUS-133: Audio Recording Techniques (3 credits), and FLM-110: Filmmaking I (3 credits).

Sterling Regional High School, Cherry Hill West High School, and Cherry Hill East High School will create and align their esports curriculum to the ESP.AAS requirements.

Challenges:

Budget for curriculum.

Ancillary outcomes:

- **Interactions with Board of Education members.**
- **Experiential learning opportunities.**
- **In-person high school competitions.**
- **Relationship with Garden State Esports.**

Words of advice:

- **Speed of implementation of new ideas.**
- **Board of Educations split on support.**

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Esports Production – Content Creation Hub Pathway Pilot

Mapping prior learning assessment (PLA) skills, credentials, and certificates to credit curriculum to industry-valued credentials in esports production provides opportunities to career advancement for new populations of adult learners interested in fields related to esports and content creation.

This will be accomplished through the institution's PLA process created by the findings of Camden County College's PLA Task Force of 2022-2023.

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Esports Production – Content Creation Hub Pathway Pilot

Identify entry points into the program for returning adult learners, and exit points with a credential that can quickly lead to quality employment:

- **Enhance program delivery for adult learners and incumbent workers, including services connected to adult literacy in order to connect students with “next level” opportunities in emerging industries.**
- **Build pathways to attract a diverse group of students.**

Ancillary outcomes:

Provided opportunities to work with unique populations, including veterans, justice-impacted, etc.

- **“Video Games for Veterans”**

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Esports Production – Content Creation Hub Pathway Pilot

Camden County College will provide professional development opportunities to other faculty within NJ based on best practices in the state, including statewide symposium on esports, for sharing this vital information with other colleges in the consortium.

Symposium:

Tentatively scheduled for May (GSE Intercollegiate Cup Finals)

Challenges:

Wide spectrum of PD needed in this field.

Esports Production – Content Creation Hub Pathway Pilot





NJ Big Data Alliance – Data Science Articulation

Kelly Fitzpatrick, County College of Morris

Joe Diaco, Camden County College

Ines Figueiras, Essex County College

EDUCATION PARTNERS:

Camden County College

Essex County College

**Hudson County
Community College**

Middlesex College

County College of Morris

**Rowan College at
Burlington County**

**Georgian Court
University**

Kean University

**Montclair State
University**

**Ramapo College of NJ
Rowan University**

Rutgers University

NJ Big Data Alliance – Data Science Articulation

The establishment of articulation agreements between Community Colleges and 4-Year colleges/universities ensures a seamless transfer pathway for Community College graduates in Data Science. These agreements require the alignment of Community College curriculum to 4-year institutions' curriculum.

The NJ Big Data Alliance is made up of leading higher education institutions (including NJ's 17 four-year colleges and universities), government organizations and industry members focused on research and collaboration in advanced computing and data analytics, education, technology and artificial intelligence (AI).

This project establishes a formal relationship between NJ's Community Colleges and the NJ Big Data Alliance. Through this partnership, we are aligning Community College curriculum to 4-year institutions' curriculum to enable the creation of articulation agreements in Data Science.

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NJ Big Data Alliance – Data Science Articulation

In 2024, NJBDA amended its bylaws to include 2-year institutions who operate a program that teaches courses and/or conducts research in the area of data science and/or advanced computing alongside the current roster of 4-year colleges and universities. Benefits of membership in NJBDA include:

- 1. The ability to provide input and guidance on academic course development, topics for training and workshops, research needs, and the strategic direction of the consortium.**
- 2. The ability to contribute to the organization of, and/or host the NJBDA annual symposium and other events.**
- 3. Participation in regular virtual and in-person consortium meetings to build professional networks.**
- 4. Participation in NJBDA programs, externships, internships, and workshops for Community College students, faculty, and staff.**

Through the NJ Pathways Initiative, Community Colleges are joining NJBDA.

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NJ Big Data Alliance - Data Science Articulation

NJ Transfer allows students to see the course equivalencies from two-year to four-year institutions. The consortium has worked very hard to populate the statewide transfer system with course alignment for Data Science Courses.

Example: County College of Morris Introduction to Data Science Class

	https://njtransfer.org/				
	CCM	CCM	Transfer College	Course	Title
1	MAT114	Title: Introduction to	Centenary University	DAT2001	INTRO TO DATA SCIENCE
2		Data Science	Drew University	DATA200	DATA SCIENCE: INTRO, HISTORY, AND CASE STUDIES
3			Felician University	CS499	ADV DATABASE AND KNOWLEDGE DISCOVERY
4			Kean University	MATH3710 K1, K3	FOUNDATIONS OF DATA ANALYSIS
5			Ramapo College	DATA101	INTRODUCTION TO DATA SCIENCE
6			Thomas Edison State University	DSI2000	Visual Storytelling With Data

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Example: County College of Morris Python I Programming Class

	https://njtransfer.org/				
	CCM	CCM	Transfer College	Course	Title
1	CMP 131	Title: Fundamentals of Programming	Berkeley College	ITM 2271	SPECIAL TOPICS IN TECHNOLOGY
2		Python I	Bloomfield College	CMP126A	Programming I
3			Centenary University	CSC1020	PROGRAMMING FOR EVERYONE I
4			DeVry University	CEIS110	INTRODUCTION TO PROGRAMMING
5			Drew University	CSCI150	INTRODUCTION TO COMPUTER SCIENCE IN PYTHON
6			Felician University	CS314	
7			Georgian Court University	CS220	PYTHON PROGRAMMING
8			Kean University	ID 1400 K1, K3	TECH & INFO SYS IN MODERN SOCI
9			Monmouth University	CS175	INTRODUCTION TO COMPUTER SCIENCE I
10			New Jersey City University	CS252	PROGRAMMING FOR ALL IN PYTHON & COMP. SCI. PRINC.
11			NJIT	CS100	ROADMAP TO COMPUTING
12			Ramapo College	CMP5130	SCI PROBLEM SOLVING-PYTHON
13			Rowan University	CS01104	INTRO SCIENTIFIC PROGRAMNG
14			Rutgers	21198101	COMPUTERS AND PROGRAMMING I
15			St. Peter's University	CS241	PYTHON PROGRAMMING FOR COMPUTER SCIENTISTS
16			Stockton University	CIST2110	PROGRAMMING IN PYTHON
17			Thomas Edison State University	COS2050	Python Programming

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NJ Big Data Alliance - Data Science Articulation County College of Morris

Team Groundhogs Earn Top Spot in Two-Year College Category



CCM Groundhogs team members (from left to right/top to bottom): Tommy O'Sullivan, of Randolph; Mark Young, of Succasunna; Stephen Coates, of Long Valley; John Tran, of Union; and Khymali Williams, of Dover.

A team of five students in the Data Science Program at County College of Morris (CCM) have clinched the top spot in the Two-Year College Category for the American Statistical Association's (ASA) Fall Data Challenge 2023: Stack Overflow Developer Survey.

In its eighth year, the current challenge was to provide insights into the business model of a startup company developing a boot camp for coders and developers.

"We are immensely proud of our team, CCM Groundhogs, for their outstanding analysis of real-world data," said CCM Professor Kelly Fitzpatrick, Department of Mathematics, who served as Faculty Advisor. "The team took into consideration the startup has sufficient initial funding to focus on two languages and to initiate planning for a third."

The college is proud of the CCM Groundhogs team: Stephen Coates, of Long Valley; Tommy O'Sullivan, of Randolph; John Tran, of Union; Khymali Williams, of Dover; and Mark Young, of Succasunna. The victory highlights their ability to apply classroom knowledge, address timely topics and showcase a collaborative spirit and teamwork that defines CCM. The students have

also positioned themselves as future leaders in data analysis and business strategy.

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NJ Big Data Alliance – Data Science Articulation

Camden County College DSC.AAS articulation to 4-year colleges/universities

Status:

- **Ramapo – established**
- **Rowan University 2+2 B.S. in Data Science - in progress**
- **Centenary University – in progress**
- **Rider University – on hold**

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NJ Big Data Alliance - Data Science Articulation

Camden County College (CCC) Students Compete in NYC Alteryx Datathon

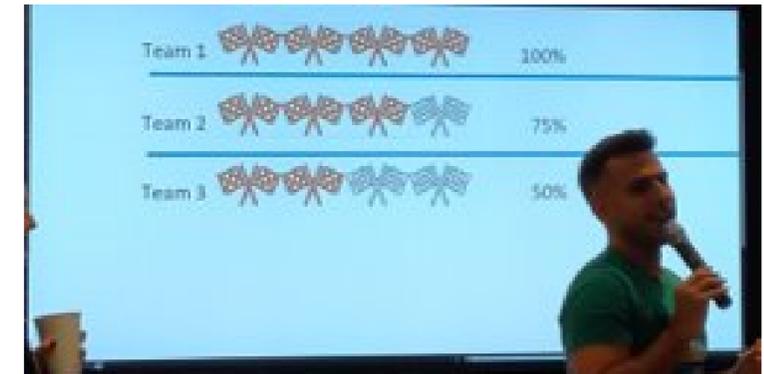
October 13, 2023 six Camden County College (CCC) students participated in the virtual preliminary round of the East Coast Alteryx Datathon.

- **Three CCC students placed in the top 10 in the preliminary round.**
- **All six were invited to the on-sight finals in NYC.**
- **CCC students were the only two-year college students to advance past the preliminary round.**
- **October 20th five students traveled to NYC for the final round of the Alteryx Datathon for a full day of competition and a meet and greet with company sponsors of the event.**
- **One CCC student's team placed third in the final, lightning round.**

STUDENT REMARKS:

“IT WAS FUN AND EXCITING AND I WAS HAPPY TO MEET WITH POTENTIAL EMPLOYERS”

“IT WAS GREAT MEETING AND WORKING WITH OTHER SCHOOL'S DATA SCIENCE STUDENTS”.



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NJ Big Data Alliance – Data Science Articulation Essex County College

- **Due to most students lacking a strong math background, faculty decided to split the Introduction to Data Science Course into two courses:**
 1. **Data Science I (DSC 141) with a prerequisite of algebra and probability and statistics.**
 2. **Data Science II (DSC 241) with a prerequisite of Calculus II. Therefore, students can take Data Science I (DSC 141) in their second semester.**
- **Four new courses were created for the new Computer Science: Data Science A.S. degree option: DSC 141 Data Science I, DSC 241 Data Science II, DSC 242 Introduction to Artificial Intelligence, and DSC 243 Data Visualization.**
- **The Computer Science: Data Science Option is anticipated to be offered in the Fall 2024 semester.**
- **Letters of transferability were received from the following institutions:**
 - **New Jersey Institute of Technology (NJIT)**
 - **Kean University**
 - **Drew University**
 - **Caldwell University (Caldwell/Essex Scholars Agreement)**

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NJ Big Data Alliance – Data Science Articulation

NJBigData
Alliance

[< « All Events](#)

2024 NJBDA Annual Symposium

Artificial Intelligence Impacts on Society & Higher Education

May 17 @ 8:30 am – 3:30 pm

Location: Rutgers University, New Brunswick

<https://njbda.org/event/2024-njbda-annual-symposium/>

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NJ Big Data Alliance – Data Science Articulation



MINDING YOUR BUSINESS

In an effort to bring more visibility to its members and the business issues surrounding them, NJBIA is launching a brand new weekly television show this weekend on News 12+.

NJBIA's Minding Your Business will air Saturday and Sunday at 9:30 a.m.

Each week, NJBIA will highlight member businesses and delve deep into the policy issues confronting them. The show also promises to have some fun, too!



Q&A

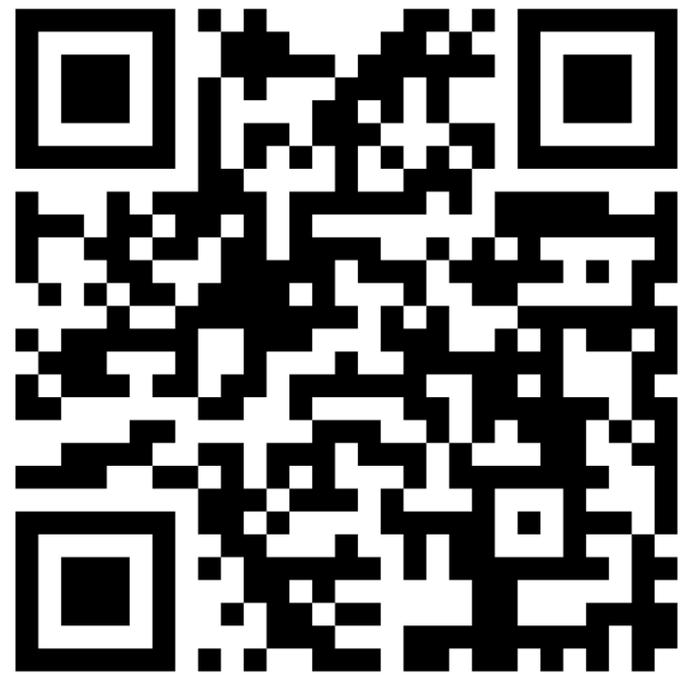
Center of Workforce Innovation for
Data & Computer Science



Closing Remarks

Catherine Starghill, Esq.

UPCOMING EVENTS



STATEWIDE INDUSTRY COLLABORATIVE MEETINGS

Manufacturing & Supply Chain Management
Thursday March 28





NJ PATHWAYS **SUMMIT**
TO CAREER OPPORTUNITIES **2024**
Aligning Education to Build an Innovative Workforce

Expanding **Innovative**

Education & Workforce Partnerships

Bally's Atlantic City
Hotel & Casino
June 12, 2024

NJPathways.org



NJ PATHWAYS TO CAREER OPPORTUNITIES

Aligning Education to Build an Innovative Workforce



	Quantity	Rate	Rating	Cost
1	774	222	629	123.05
2	222	173	173	128.32
3	870	1072	804	108.21
4	319	363	186	207.35
5	895	647	170	213.53
6	1143	478	138.33	464
7	193	42	239.12	223
8	26852	173	466.67	464
9	270	19059	139.84	1051
10	173	42	642.86	1323
11	345	99	146.61	1548
12	89	201	171.64	57
13	406	38	112.5	802
14	79	95	113.16	1322
15	2487	28	427.37	1158
16	1935	1700	267.86	932
17	1248	145.12	50	682
18	898	155.05	1113	717
19	1737	644	193.43	35
20	649	51	100.78	613
21	2453	84	4809.8	223
22	7689	1172	324.29	119
23	1784	581	161.77	397
24	1122	4849	286.55	171
25	594	409	113.37	303
26	445	486	1102.6	89
27	2166	462	695.31	72
28	6300	352	4753	50
29	1037	69	5553.85	717

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