



Bergen Community College



Update to Bergen Community College Commitment to Mainframe Education

Presented By:

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Computer Science





Bergen Community College



June 2017

WHAT HAVE WE DONE TO DATE?

Master the Mainframe

- Incorporate Master the Mainframe Into Our Curriculum
- Establish an MTM Club for Students to Work Collaboratively
- Assist a Number of Students to Voluntarily Complete MTM Part 3
- Sponsor a Mainframe Hackathon Within Our STEM C² Research Summit

Independent Research Opportunities

- Introduce a COBOL Mini-Course for STEM Scholars Program
- Students Develop an AI Application on the Mainframe
- Students Develop a Blockchain Application on the Mainframe



Bergen Community College



June 2017

WHAT HAVE WE DONE TO DATE?

Curriculum Enhancement

- Incorporate IBM Assembly Language Into Our “Computer Organization & Assembly Language” Course
- Add a “Big Data” Presentation to our “Data Structures & Algorithms” Course

Industry-Sponsored Events

- Participate in the Providence SHARE Student Day, 2017
- Participate in the ECC Conference, 2016 & 2017
- Student Presentation at ECC Conference, 2017
- Two Trips With Students to IBM Mainframe Headquarters in Poughkeepsie



Bergen Community College



June 2019

WHAT HAVE WE DONE TO DATE?

Master the Mainframe

- Attendance at MTM Club Grows From a Couple of Students to 10 – 12 Students
- More Students Voluntarily Complete MTM Part 3
- October 2018 Legends of Z Stand-Alone Hackathon with 32 Students Participating
- April 2019 Sponsor a Mainframe Hackathon Within Our STEM C² Research Summit

Independent Research Opportunities

- Introduce a Mainframe Assembly Language Boot Camp for STEM Scholars Program
- Summer 2019 STEM Scholars Working on Mainframe Healthcare Research Project



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June 2019

WHAT HAVE WE DONE TO DATE?

Industry-Sponsored Events

- Participate in the ECC Conference, 2018 with Student Demo of AI and Blockchain Integration
- Attendance at ECC Conference, 2019 with Largest Contingent of 12 Students
- Participate in the ECC Conference, 2019 with Student Presentation of Healthcare Research Project
- Two Trips With Students to IBM Mainframe Headquarters in Poughkeepsie December 2018 & March 2019
- Participation by 6 Students in 3-Day VM Workshop June 27-29 at Virginia Commonwealth University
- Participation by 1 Student in 4-Day Z/OS Client Internship
- One Former Student Will be Joining IBM Next January as a Full-Time Employee



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Bergen Computer Science
Information & Engineering Technologies
Department

MTM CLUB X **IBM**
PARTNERSHIP

Opportunities

- IBM MTM CERTIFICATION
- IBM MTM CONTEST
- IBM MTM HACKATHON
- IBM COMPANY TOUR

Why MTM?

- DATA SECURITY
- DATA MANAGEMENT
- CLOUD SYSTEM



OFESSO
Alan Eliscu
aeliscu@bergen.edu

'Master The Mainframe' offers a wonderful opportunity for students to learn more about the IBM system Z mainframe in a fun-filled self-paced learning environment. IBM rewards success with industry-recognized batches that show your level of achievement. We also have a club to assist in accomplishing the challenges while encouraging comrades. NO EX E IENCE IS NECESSA Y!



Scan me

WELCOME

For more information, such as Room and Time, Scan, Put your info We'll contact you soon



MTM Club

- ✓ Encourages Camaraderie
- ✓ Students Help One Another
- ✓ Some Students Opt to Complete Part 3
- ✓ Professor Offers Help & Explanations
- ✓ Club Stipend Supports Our Other Activities
- ✓ Opportunity for Ad Hoc Tutoring of Class Content

Me

Student Career Day

On Tuesday, August 8, 60+ students from 16 colleges and universities from around the country participated in [Student Career Day](#) and competed in the Master the Mainframe Hackathon. With fun challenges to experience the power of z Systems in Application Development, competitors earned points towards prizes and had the opportunity to connect with IBM and Rocket Software experts. Congratulations to the Hackathon winners: **Jonny Lazarte from Bergen Community College**, Akeem Brooks from North Carolina A&T and Dan Synder from New Brunswick College.



2017 Enterprise Computing Conference



SC3104/3105 Sadik Erisen, Tamar Tokman, Arnav Lohe, Tristan Draper, Ross Kernez, Bergen Community College
Grace AI & Search Engine

Visits to IBM Mainframe Headquarters



Fall 2018 – 42 students

Spring 2019 – 36 students

Fall 2019 – next scheduled trip



Jeff Bisti: Cognitive AI Solutions Architect for IBM



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STEM C² Research Summit - April 13th, 2018

Kudos to our IBM Support Team, Both On-Site and via Remote Assist

Luis De Abreu
BCC STEMatics Grant Program Director
STEM C² Research Summit Conference Coordinator



Frank de Gilio
IBM Corporation
Distinguished Engineer, Cloud Architect
Keynote Speaker





Bergen Community College



STEM C² Research Summit - May 14th, 2019

Kudos to our IBM Support Team and Student Assistants

E Maria Boonie

IBM Corporation

VP, Offering Management IBM Z and LinuxONE Growth

Keynote Speaker



Luis De Abreu

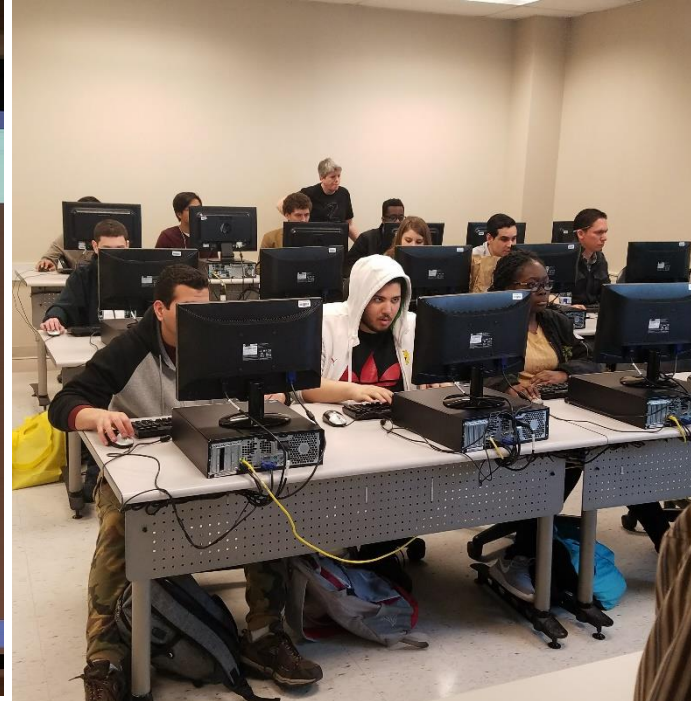
BCC STEMatics Grant Program Director

STEM C² Research Summit Conference Coordinator



EXPIRED

Score	First Name	Last Name
147	Joeli	Lim
141	Jadin	Luzuriaga
136	Marlen	Herrera
136	Fatih	Durmaz
110	Andres	Garces
110	Brian	Aguirre
105	Heather	Murphy
105	Emily	Marzano
105	Thomas	Bravo
080	Alex	Reitmeyer
070	Gustavo	Prado-Longo
070	Cesar	Hernandez
060	Hulkaroy	Jouraboeva
055	Matthew	Pecko
055	Ayomide	Akingbade
055	Jered	Gibb
055	Heber	Portal-Reyes
055	Afua	Anim
055	Aidan	Castellucci
055	Justin	Meyer
055	Zachary	Citti
050	Raymond	Rodriguez
020	Kunjesh	Kakadiya
020	Pooja	Solanki
015	Matthew	Liulic



Master the Mainframe Hackathon

when?

where?

Friday,
April 13th
1 - 3 PM



TEC-107
Paramus campus

at the STEM C²
Research Summit

Master the Mainframe is the world's largest student mainframe competition and it has returned for its 13th year in a row with new prizes and new challenges for students around the world.
NOW IN BERGEN COMMUNITY COLLEGE!

You must register prior to the event:
tinyurl.com/2018BCCHackathon

WIN A \$200 GIFT CARD
while gaining unique skills that can land you
a career in Fortune 500 companies
around the world!

**NO EXPERIENCE
NEEDED**

Learn more at
ibm.com/it-infrastructure/z/education/master-the-mainframe



***The content of this informational sheet was developed under a grant from the U.S. Department of Education. However, the content do not necessarily represents the policy of the U.S. Department of Education, and you should not assume endorsement by the U.S. Federal Government.



WHAT'S ON OUR BUCKET LIST?



Master the Mainframe

Students in completing Part 3 on their own
Students to seek badges from other areas of IBM Academic Initiative

Curriculum Enhancement

Opportunities to infuse mainframe technology in the curriculum
Approach to include mainframe technology in our IT courses

- Offer a section of our Database Systems course using mainframe platform and DB2
- Offer additional mini-courses in COBOL, CICS, DB2
- Incorporate more Blockchain concepts into our existing Data Structures course





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WHAT'S ON OUR BUCKET LIST?

Extracurricular Activities

- Continue periodic visits to IBM Mainframe Headquarters in Poughkeepsie
- Continue to participate in industry-sponsored activities (Z Council, ECC, SHARE)
- Sponsor an all-day mainframe hackathon for students in the northeast
- Encourage students to continue independent development using mainframe
- Participate in our annual STEM C² Research Summit

Grow Our Relationships

- Seek corporate partners to offer internships, scholarships or apprenticeships
- Seek four-year college partners to offer scholarships to study mainframe
- Consider offering courses through our Continuing Education department





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MAINFRAME PURCHASE OPTION

- We are entertaining the possibility of purchasing a System/Z Mainframe
- To help to defray some of the cost, we are seeking partners and/or sponsors
- Potential Opportunities:
 - Develop a certificate in mainframe computing
 - Assist companies in staffing by developing a pipeline of talented young students
 - Offer nearby colleges the opportunity to share in the ownership and allow their students to have direct hands-on access
 - Provide remote access for more distant colleges and ability for them to identify their own educational programs to be incorporated



Bergen Community College



WHERE DO WE NEED HELP?

We have done well in piquing student interest. Now we need To move to the next level.

- Industry contacts where our students can get real hands-on experience (internships, job opportunities, apprenticeships)
- Partner with 4-year schools offering mainframe course work (transfer agreements, scholarships, guidance in curriculum)
- Bring industry experts to the school to offer interesting presentations
- Build relationships with schools currently offering mainframe courses (shared course materials, brainstorming sessions, mentoring)
- Expand our repertoire of extracurricular learning opportunities



Medical Databases in Mainframe Computing



Who we are

- Tyler Zamski - Data Manager/Conceptual Architect
- Andres Gonzalez - Hardware/Interface Specialist
- Ramya El-Saleh- Clinical Researcher/Deep Learning
- Caitlin Mooney - Mainframe Dev/Computational Analyst
- Michael Hernandez- Data Specialist





STEM Student Scholars Program - 3rd year - 2019

Expectations

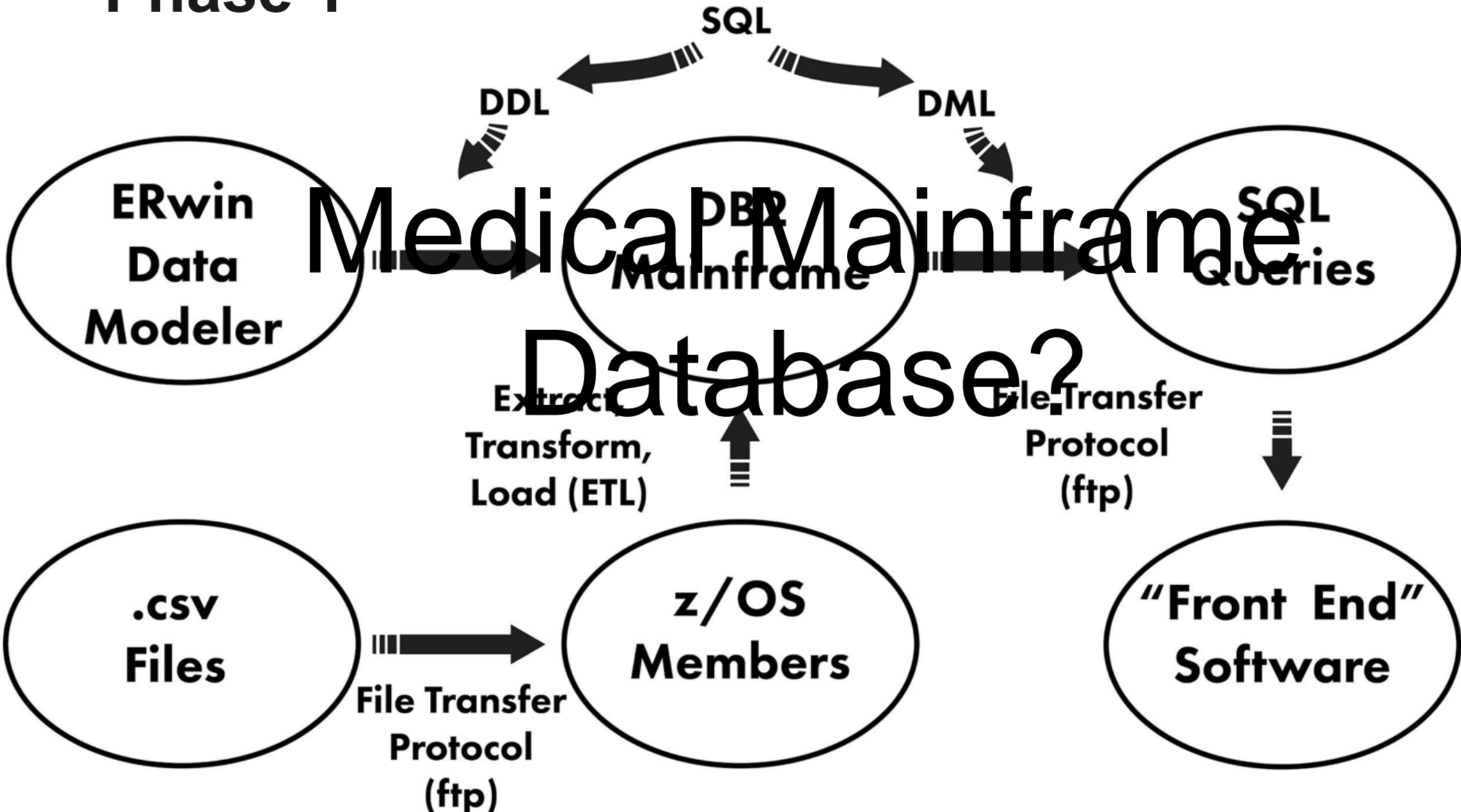
- Minimum GPA of 3.75
- Participation in a summer research internship
- Weekly Project updates
- involvement in a mentorship role

Extracurricular learning through mini-courses in:

- Assembly Language
- COBOL
- MATLAB
- Arduino
- Technical Writing
- ...and more!



“Phase 1”



ETL Process



- Downloading

24	IJBODY1	Body Part hurt[first body part]	32 (unique)
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our CSV file NHIS CDC, 2017

IJBODY - **03** - buttocks

IPWHAT1 - Working around the Yard or

- Variable Layout documents House

IPSTU - Not a Student

- Establishing Parallel and Related Tables

- Demographic Data



Hardware:

- Centralizing our work.
- Created “LOLA”
Logistical Output Load Array
- Network Data Share
- Streamline workflow
- Automating....



What could we do with all this data ?

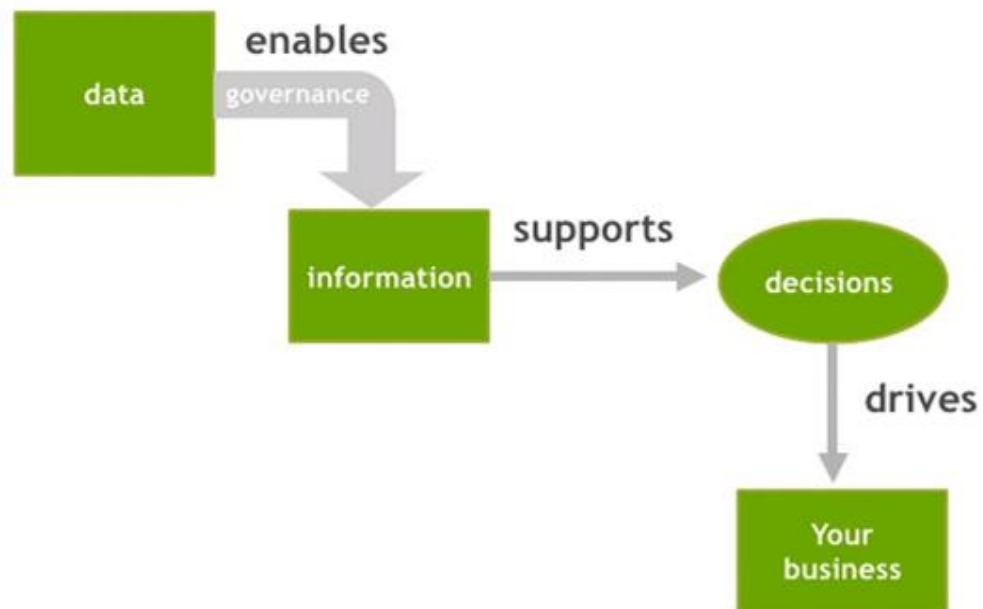


Vision

Gain skills in a demanding field to address an unmet need.

Mission

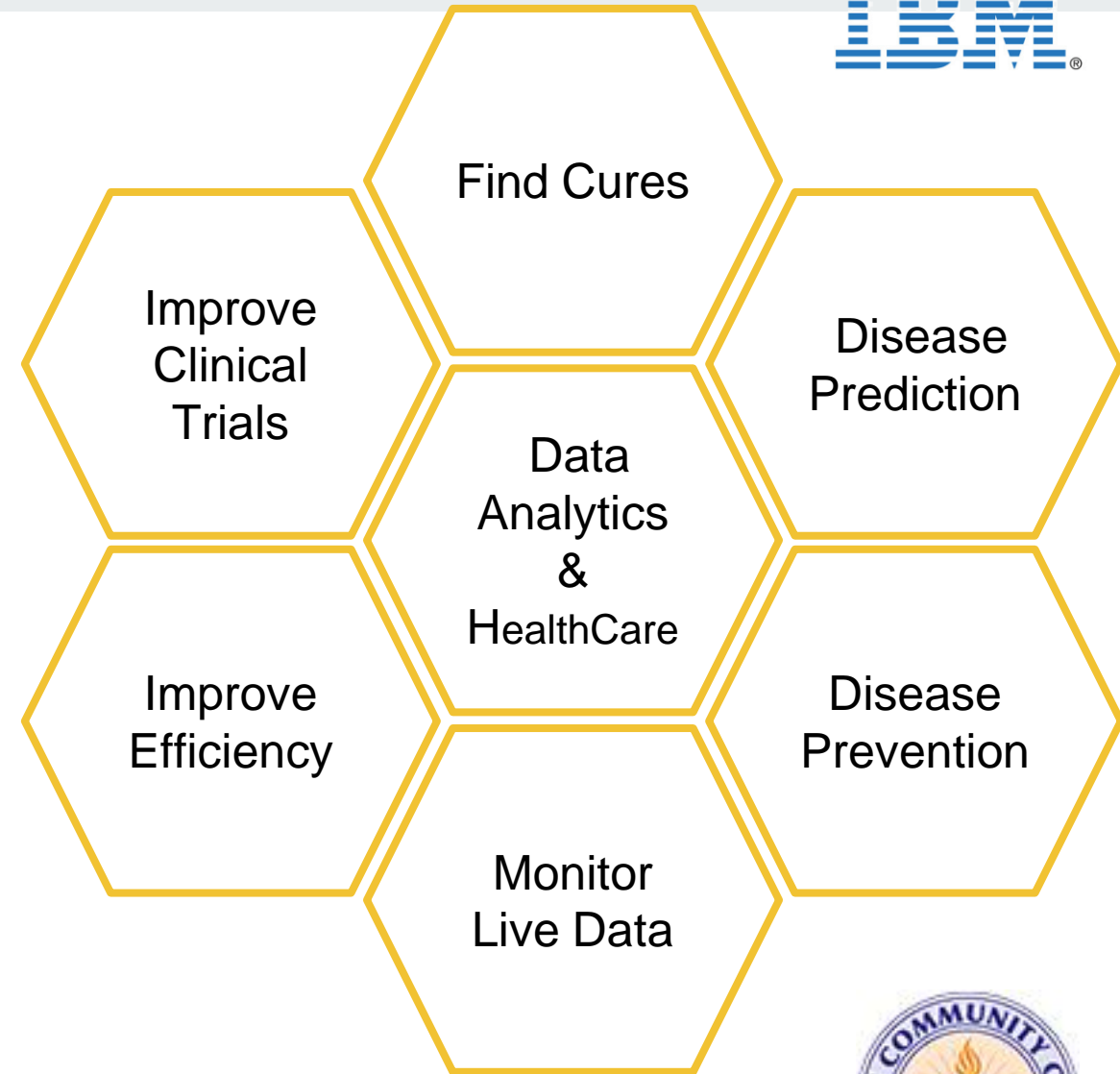
Participate in transforming healthcare & medical education through big data analytics.






Why

- Significant delivery challenges.
- List of chronic & terminal diseases.
- Medicine is data driven.
- Solutions require collaboration across disciplines.





Q & A