

College of Integrated Science and Engineering

Summer Orientation 2025

Dr. M. Afzal Upal
Associate Dean, CISE

○ JAMES MADISON UNIVERSITY® ○

Welcome to the College of Integrated Science and Engineering (CISE – pronounced “size”)!



We value theoretical knowledge, but we thrive on applying that knowledge.

Small Group Discussion

Transitioning from your current institution to JMU

- What do you expect will be the same/familiar?
- What do you expect to be different?

Sharing Your Conversations

Transitioning from your current institution to JMU

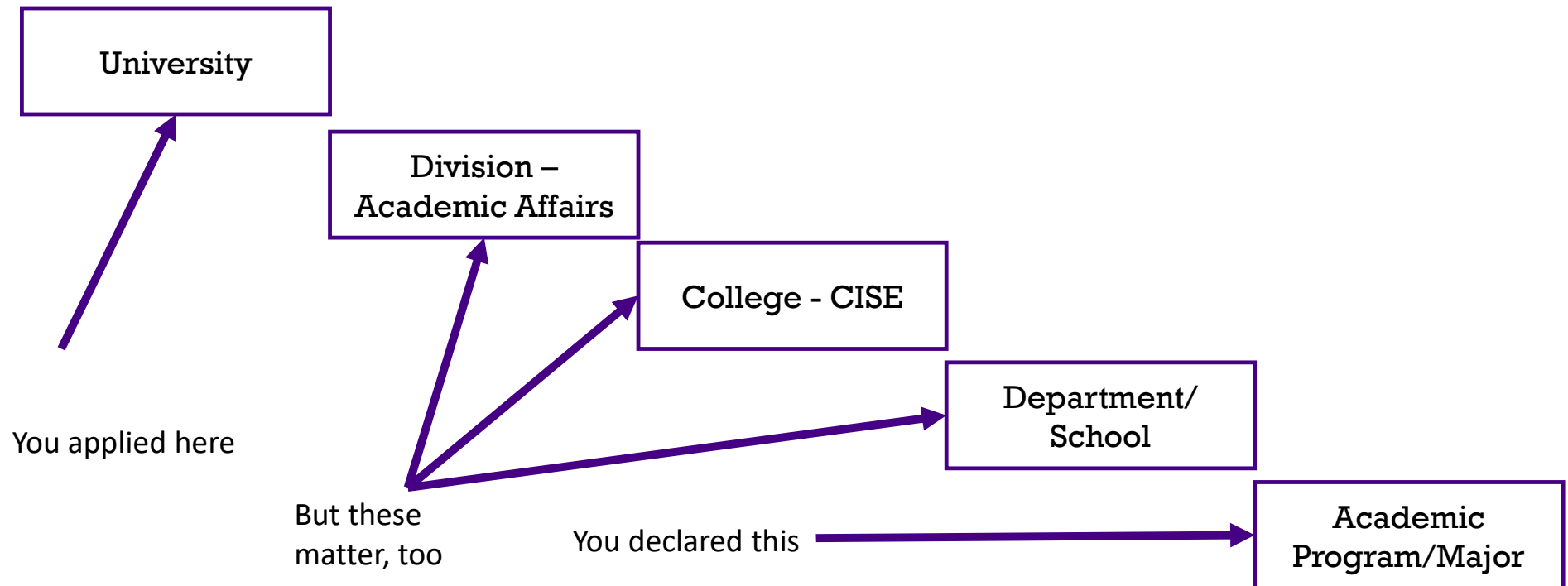
Similar

- Hard work is rewarded
- Academics are your job
- Extracurriculars
- Balance fun and school
- Opportunities to learn
- Core requirements & electives

Different

- More freedom
 - Choice of classes/major & more to choose from
 - Nobody dictating time use, class attendance, etc.
- You'll have more responsibility for your education

Simplified organizational structure of JMU



CISE Academic Unit Heads



Computer Science
Vetria Byrd



Engineering
Rob Prins



Integrated Sciences,
GEOG & IA
Henry Way



Integrated Sciences, ISAT
Stephanie Stockwell

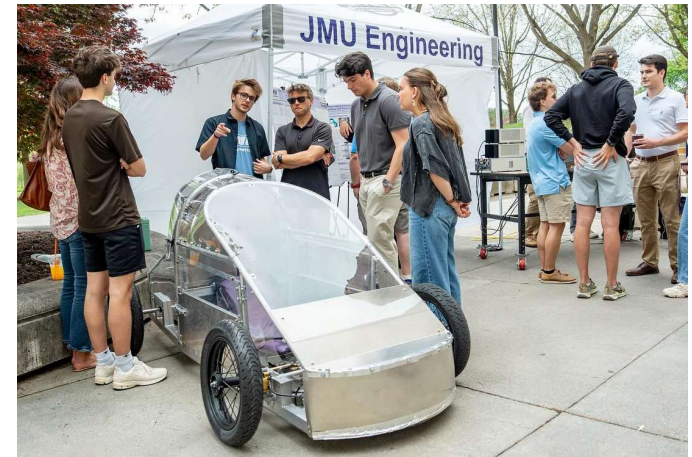
CISE majors

- Department of Engineering
 - Engineering
- Department of Computer Science
 - Computer Science
 - Information Technology
- School of Integrated Sciences
 - Geography
 - Intelligence Analysis
 - Integrated Science and Technology
 - Biotechnology (with Biology & Chemistry)



BS Engineering

- A multidisciplinary program designed with input from industry for the 21st century
 - hands-on learning
 - 2-year capstone
 - teamwork
 - ABET-accredited
- **Concentrations**
 1. Electro-Mechanical Systems;
 2. Civil and Environmental, and
 3. Geo-Environmental.



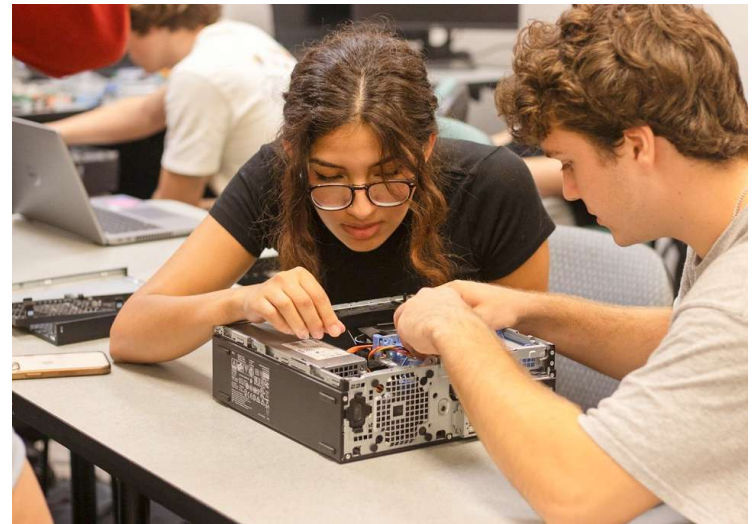
BS Computer Science

- Study of the design and analysis of algorithms
- Hands-on learning
- **Careers:**
 - Computer programmer
 - Software developer
 - Data scientist
 - Software engineer



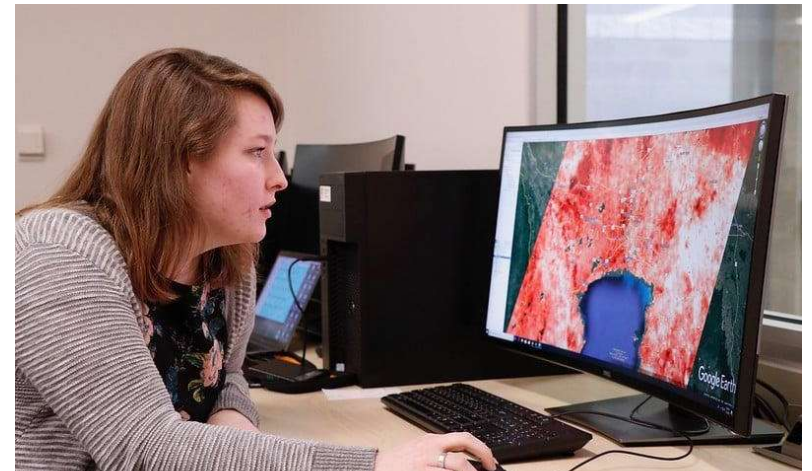
BS Information Technology

- Study of designing, developing, and managing computer-based systems and solutions
- hands-on learning
- capstone
- less theory of computing & more system administration skills
- **Careers:**
 - System Administrator
 - Computer programmer
 - IT project manager



BS Geography

- Study of earth, its environment, its people and relationship between people and places
- **Concentrations**
 1. Applied GIS,
 2. Environmental Conservation, and
 3. Sustainability and Development.
- **Careers:**
 - Geospatial intelligence analysts
 - Geographic information scientists
 - Urban and regional planners
 - Forest and wildlife managers
 - Climatologists and meteorologists



BS Intelligence Analysis

- Using technology to collect information about a topic, analyze and present it to a decision maker
- Capstone experience
- Close connections with federal government intelligence agencies
- **Careers:**
 - Intelligence Analyst working for a federal government agency (e.g., FBI, CIA, DIA, and NSA)
 - Law enforcement
 - Financial institutions



BS Integrated Science & Technology (ISAT)

- A unique JMU program teaching science and technology in an integrated fashion
- Systems thinking
- Capstone experience
- ABET-accredited
- **Concentrations:**
 1. applied biotech,
 2. energy,
 3. environment and sustainability,
 4. industrial and manufacturing systems,
 5. public interest technology, and
 6. applied computing.



What we ask of you

- Make academics your priority
- Bring your best effort
- Push yourself beyond your comfort zone
- Work with others with humility



[illegible]

- [illegible]

Small Group Discussion

What are you most worried about as you embark on your university journey?

Small Group Discussion

What's your plan for overcoming the challenge that's worrying you the most?

JMU: A Research Intensive University that thinks of itself as a Liberal Arts College

- Learning Centers (Science & Math Learning Center; Writing Center, Communication Center, Peer Assisted Study Sessions)
- Learning Success Strategies
- Counseling Center
- Office of Disability Services
- Madison Advising Peers
- Dean of Students
- Center for First Generation Students
- Center for Multicultural Student Services
- Community Engagement and Volunteer Center



What you can expect in CISE

- Small class sizes in the major
- State-of-the-art equipment and facilities open to undergrads
- Faculty with a passionate commitment to outstanding education
- High-impact teaching practices
 - Active learning
 - Hands-on activities
 - Traditional lectures
 - Team-based learning



Complex Real-world Problems

- United Nation Sustainable Development Goals (SDGs)
- Job-ready technical skills
- Hands-on learning
- Teamwork
- User-centered design



Opportunities

- Undergraduate Research
 - Undergraduate Research Journal
 - Conference travel
- Study abroad/away: CISE programs from Costa Rica to Australia to Germany to Malta and more



Preparing you to succeed...with many options!

- Variety of paths after graduation
 - Jobs with Businesses or Government
 - Graduate School
 - Start-up Companies
 - Service Work – Peace Corps, Teach for America, etc.
- We help you in this process
 - CISE Industrial Partnership Program (IPP)
 - CISE Career and Internship Fairs
 - University Career Center



Questions?