# Calhoun Computational Research Center: Overview

*IST 126.001*

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# *History*

The Calhoun Computational Research Center was established on January 22, 2017, on Calhoun County, Georgia. The Calhoun Computational Research Center was founded as a collaborative effort between scientists, mathematicians, engineers, and computer scientists in Georgia to address several problems in these fields. Most of our current projects focus primarily on machine learning, high performance scientific computing for large scale numerical problems found in engineering, and advanced graphics simulation and visualization for scientific concepts.

# *Products and Services*

The Calhoun Computational Research Center offers the following

products and services:

1. Artificial intelligence to process big data into useful information.

2. Cyber security solutions and penetration testing.

3. Representation of three-dimensional surfaces and texture mapping.

4. Numerical methods for scientific visualization.

5. Development, debugging, testing, and optimization on high performance systems used to solve engineering and scientific problems.

6. Software to solve calculus-related problems, such as integrals and differential equations found in sciences and engineering.

7. Data visualization and custom workflow capabilities.

# *Staff*

- **Dr. Thomas B. Kirby**
  - **Executive Director**.
  - **B.S.E., Cornell University (1974); M.S.E., Ph.D., University of Georgia (1974, 1978).**

- **Dr. John S. Ware**
  - **Senior Director of Engineering and Computing Programs.**
  - **B.S.E., M.S.E., University of Pittsburgh (1981, 1985); Ph.D., Georgia Institute of Technology (1996).**

- **Dr. Kathryn Connell**
  - **Chief Engineer: Mathematical Software.**
  - **B.S.E, DeVry University (1991); M.S.E., Ph.D., University of Florida (1997, 2005).**

- **Dr. Jeanene Willet**
  - **Chief Engineer: Scientific Programs.**
  - **B.S.E., Purdue University (1995); M.S.E., University of South Florida (2005); Ph.D., University of Mississippi (2010).**

- **Dr. Lewis McCoy**
  - **Chief Engineer: Engineering Programs.**
  - **B.S.E., Mercer University (1990); M.S.E, Howard University (2003).**

# *Contact Information*

- **For general information.:**
  - **E-mail: info@calhoun.org**
  - **Telephone: (470) 470-7010**

- **For business inquiries:**
  - **E-mail: business@calhoun.org**
  - **Telephone: (470) 950-7678 (ext. 471).**

- **Points of contact:**
  - **Dr. Thomas B. Kirby**
    - **E-mail: kirby.th@calhoun.org**
    - **Telephone: (470) 950-7678 (ext. 150).**
  - **Dr. John S. Ware**
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    - **Telephone: (470) 950-7678 (ext. 160).**
  - **Dr. Kathryn Connell**
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    - **Telephone: (470) 950-7678 (ext. 170).**
  - **Dr. Jeanene Willet**
    - **E-mail: willet.je@calhoun.org**
    - **Telephone: (470) 950-7678 (ext. 180).**
  - **Dr. Lewis McCoy**
    - **E-mail: mccoy.le@calhoun.org**
    - **Telephone: (470) 950-7678 (ext. 190).**

# _Our Information Systems_

- **The "Eclipse" computing cluster.**
    - o **The "Eclipse" computing cluster, which was created in May 2018, contains many high-end servers that are used both for multi-node parallel program development and shared memory and threaded parallel program development.**
- **The web search engine "Neo-Mosaic."**
    - o **The Calhoun Computational Research Center developed an special search engine called "Neo-Mosaic" that implements machine learning in order to provide optimal search results.**
- **MySQL.**
    - o **MySQL is the Data Base Management System (DBMS) used to store and analyze the information gathered from all our computing processes.**
- **Our website: https://research.calhoun.org.**
    - o **Within our website, we store information related to our ongoing projects and archives on past projects.**
- **Microsoft Project**
    - o **We use this program to track the progress of our projects.**
- **ZOOM**
    - o **We use ZOOM in order to host video communication among the company's staff.**