ALGEBRA, DISCRETE MATHEMATICS, AND NUMBER THEORY

Clemson University

RESEARCH AREAS

- Coding Theory and Cryptography

Dr. Gao

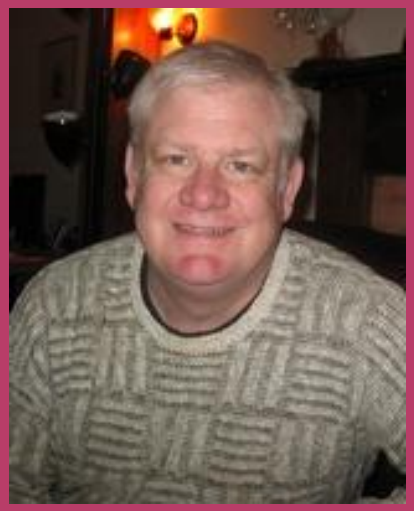
Dr. Matthews

Dr. Burr

- Problems: discrete logarithm problem, factoring integers and polynomials, Grobner bases, algebraic geometry codes, low-density parity-check codes
- Students:
  - Dr. Gao: Nate Black, Juilane Capaverde, Yue Mao
  - Dr. Matthews: Sarah Anderson

RESEARCH AREAS

- Combinatorics



Dr. Calkin

Dr. Poznanovik

- Problems: combinatorial and probabilistic methods (especially in number theory), enumerative and algebraic combinatorics, discrete mathematical biology
- Students:
  - Dr. Calkin: Hayato Ushijima-Mwesigwa

RESEARCH AREAS

- Graph Theory

Dr. Goddard | Dr. Novick

  - Problems: domination digraphs, network algorithms, algebraic graph theory, binary matroids and codes, closure systems
  - Students:
    - Dr. Goddard: Honghai Xu, Kirsti Wash

RESEARCH AREAS

- Mathematical Biology

Dr. Macauley

Dr. Dimitrova

  - Problems: graph dynamical systems, combinatorial aspects of Coxeter groups, Boolean networks, finite deterministic and stochastic dynamical systems, Grobner bases
  - Students:
    - Dr. Macauley: Shih-Wei Chao, Grady Thomas

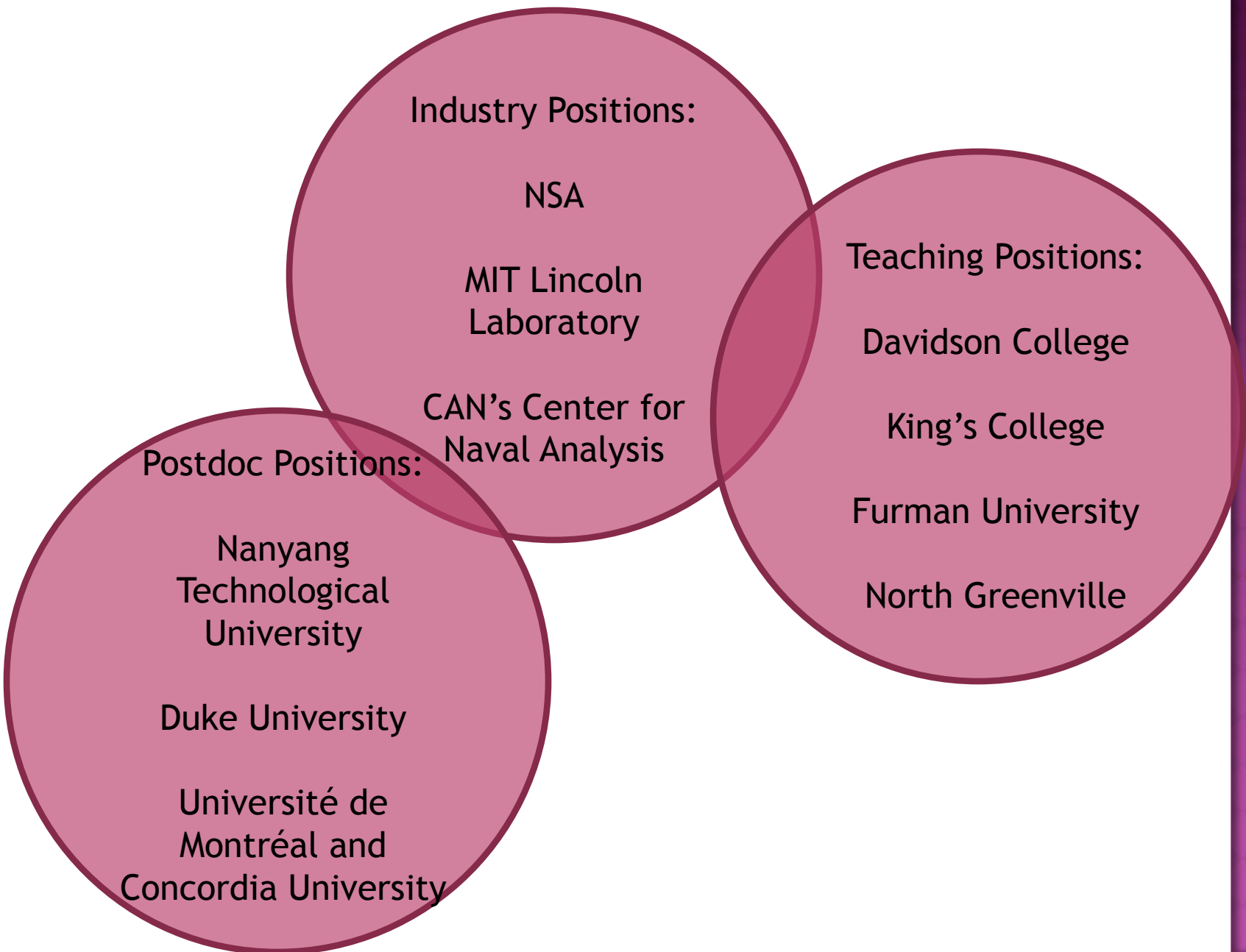
RESEARCH AREAS

- Number Theory

		
Dr. Brown	Dr. James	Dr. Xue

  - Problems: special values of L-functions, Iwasawa theory, Galois representations, arithmetic theory of modular forms, elliptic curves,
  - Students:
    - Dr. Brown: Rodney Keaton, Dania Zantout
    - Dr. James: Jason Hedetniemi

LIFE AFTER GRAD SCHOOL



WHAT TO DO NOW

- Classes
  - 851, 852, 853
  - Graph Theory: 854 & 954
  - Combinatorics: 855
  - Coding Theory: 856
  - Cryptography: 857
  - Number Theory: 858, 951, 952
  - Special Topics Classes: Coding Theory, Lie Groups, Algebraic Geometry I and II, Mathematical Biology, ….

WHAT TO DO NOW

- Seminars:
  - ADM Seminar:
    - **Thursdays 3:30 - 4:30, M-102 Martin Hall**
    - **Contact: Dr. Macauley**
  - Number Theory Seminar:
    - **Wednesdays 3:30 - 4:30, M-102 Martin Hall**
    - **Contact: Dr. Brown, Dr. James, or Dr. Xue**
  - Graph Theory Seminar:
    - **Fridays 3:30 – 4:40, 0 – 10 Martin Hall**
    - **Contact: Dr. Hedetniemi (hedet@clemson.edu)**

- Conferences:
  - Clemson Mini-Conference on Discrete Mathematics and Algorithms
  - The Palmetto Number Theory Series (PANTS)

WHERE TO FIND MORE INFORMATION

- Algebra Department:

  http://www.clemson.edu/ces/math/graduate/areas/algebra.html

- Applicable and Computational Algebra Lab:

  http://www.math.clemson.edu/~sgao/WEB/

- Number Theory:

  http://www.math.clemson.edu/~jimlb/NumberTheoryGroup/numbertheorygroup.html