

Research A&T

DIVISION OF RESEARCH & ECONOMIC DEVELOPMENT
NORTH CAROLINA A&T STATE UNIVERSITY
EDWARD B. FORT INTERDISCIPLINARY RESEARCH CENTER

EDITOR'S NOTE:

This is the seventh in a series of stories featuring University Approved Centers.

Bringing Engineering To Life...

UPCOMING EVENTS

Research
Appreciation Day
Sponsored By:
Division of Research
& Economic
Development
April 18, 2008
11:00a.m.-2:00p.m.
Fort IRC Building
Room 410

For more information
contact The Office of
Research Services at
(336) 334-7995



For many years scientists have been fascinated with the idea of making engineering systems more biological in composition and functionality. The Center for Cooperative Systems (COS) performs high-impact research in system adaptation, cooperation, reliability, and autonomy with applications to unmanned vehicle systems and aerospace exploration. The center combines cutting-edge research on artificial intelligence, sensors, autonomous and adaptive systems with inspirations from natural biological systems to create engineering systems that sense, perceive, interact with and respond to changing environment.

“As our inspiration, we’re borrowing ideas from natural systems. They are remarkably adaptive and robust,” says Dr. David Song, Langley Distinguished Professor and Founding Director of the Center for Cooperative Systems. Our ultimate goal is to develop autonomous and reliable systems that sense, recognize, interact with, learn from, and adapt to their environment, approaching the same elegance and efficiency as living creatures.”

One of the most noticeable research projects at COS is the analysis, design, and simulation of advanced cooperative systems technologies for making current and future aerospace transportation more affordable, more proficient and more reliable. The Center’s research is both theory and application driven, focusing on dynamic modeling, path planning, adaptive and fault-tolerant control of complex dynamic systems. The COS center currently integrates five research projects:

- Cooperative Unmanned Ground Vehicle (ARO)
- Bio-Inspired Autonomous Systems Engineering (NSF-RISE)

- Formation of Unmanned Aerial Vehicle (ONR/JPL/AFRL)
- High Confidence Control Systems (NIA/NASA)
- Adaptive and Fault-Tolerant Trajectory Tracking Control of Spacecraft (NASA/UMD)

In the Center’s work, Dr. Song is joined by 6 Ph.D., 4 Master and several undergraduate students who are being exposed to multiple disciplines including controls design, simulation, programming and multiple-systems integration.



Dr. Yong-Duan (David) Song, Langley Distinguished Professor and Founding Director of the Center for Cooperative Systems.

To find out more information please visit the Center’s website at:

[http://
abner.ncat.edu/cooperativeresearchcenter/](http://abner.ncat.edu/cooperativeresearchcenter/)

**For more information about
Compliance contact:**

Donna Eaton
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336-334-7995



Sandra Evans, Director of the Office of Research Services, handled the logistics for the training session, Sponsored Programs, Compliance and Accountability.

Human Subjects Research: Tips on the Exempt Level of Review

DHHS Guidelines ([45 CFR Part 46.101\(b\) and \(c\)](#)) define research as exempt from **further IRB review** when the research involves no risk to the subject. Research that is considered exempt from Committee review must still be filed with the IRB and screened for exempt status. An approval letter will be issued to the principal investigator stating which category of exemption their research has been deemed. Afterwards, no other IRB oversight is required.

However, if the protocol is changed, the IRB must be notified.

Examples of exempt review research:

- survey research with adult subjects (18 and over) who are not public officials
- review of non-identified existing records
- observation of the public behavior of subjects where there is no manipulation of the subject; and some educational testing and classroom activity
- assessment of classroom management strategies
- analyzing census data about aging or housing
- data obtained through public records if identification of the individuals involved is not

possible

An exemption cannot be granted for research that uses the following subject populations:

- research involving prisoners
- some research involving children

Research involving children in local school systems must be approved by the NC A&T IRB **and** the school superintendent or his/her designee.

When in doubt, call the Compliance Office or IRB chairs, Dr. David Aldridge or Karen Smith-Grotto.

New Training In Effect

The Division of Research and Economic Development and the Office of Contracts and Grants have teamed up to create a training session geared toward instructing Principle Investigators on the proper policies and procedures for administering grants.

The training session, "Sponsored Programs-Compliance and Accountability", covered 14 critical points.

Eight initial trainings took place on February 18 and 19. Two additional sessions took place on February 28. All faculty members with past or present research

projects, department chairs and other administrators in the schools and colleges within A&T who are involved in the proposal approval process and grant financial transactions are required to attend the training session. A monthly session will

be held for those who did not attend the previous sessions.

For more information about the training session please contact Dr. Mitzi Bond at (336) 334-7995.

Office of Research Services Updates...

Research Services has added and updated many features on its website to better support research efforts:

- The office has added and updated federal agency links to improve connection with various governmental agencies that may be of interest.
- A Community of Science (COS) page has been added to better understand the services provided by the Community of Science.
- New COS tutorials are now available to aid in setting up and utilizing a COS profile.
- Research Services has updated budget templates, policies and guides to provide the most updated information and resources pertaining to budgets and proposal development.
- The office has also alphabetized by date all of the funding alerts to lend a hand in accelerating searches.
- Presentations from the current Lunch & Learn Workshops and Special Events have been added to provide vital information on various issues pertaining to the research process and interests.
- Research Services plans to continue to provide the most current information and tools to help make research efforts a breeze.

Workforce Program in the Mathematical Sciences
 National Science Foundation
 Document Number: PD 08-7335
Full Proposal Window: May 15, 2008 - June 15, 2008
 The long-range goal of the DMS Workforce Program is to increase the number of well-prepared U.S. citizens, nationals, and permanent residents who successfully pursue careers in the mathematical sciences and in other NSF-supported disciplines.
 Among intermediate goals to this end are improvements in recruitment, retention, education, and placement of trainees in the mathematical sciences.
 The program's primary interest is in activities centered on education through research involvement for trainees at the undergraduate through postdoctoral educational levels. Activities that broaden participation in the mathematical sciences are of significant interest to the Division of Mathematical Sciences.
http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503233
High End Computing University Research Activity (HECURA)
 National Science Foundation
 Document Number: nsf 08-531

Full Proposal Deadline(s) (due

by 5 p.m. proposer's local time): April 08, 2008

Estimated Number of Awards: 10 to 20 awards with cumulative budgets of \$500K-\$1M and project durations of up to 3 years.
 HTML: http://www.nsf.gov/pubs/2008/nsf08531/nsf08531.htm?govDel=USNSF_25
 TXT: http://www.nsf.gov/pubs/2008/nsf08531/nsf08531.txt?govDel=USNSF_25
 PDF: http://www.nsf.gov/pubs/2008/nsf08531/nsf08531.pdf?govDel=USNSF_25

NEA Learning in the Arts for Children and Youth, FY2009

National Endowment for the Arts
 Funding Opportunity Number: 2008NEA01LITA
Closing Date for Applications: Jun 09, 2008
 Earliest Beginning Date for Arts

Endowment
 Period of Support: June 1, 2009
 Archive Date: Jul 09, 2008
 Award Ceiling: \$100,000 Award

Funding Notices

Floor: \$5,000
 Cost Sharing or

Matching Requirement: Yes

Have a three-year history of programming prior to the application deadline. Have submitted acceptable Final Report packages by the due date(s) for all Arts Endowment grant(s) previously received. An organization may submit only one application under these FY 2009 Grants for Arts Projects guidelines. Link to Full Announcement: <http://www.nea.gov/grants/apply/index.html>
 If you have difficulty accessing the full announcement electronically, please contact: National Endowment for the Arts, Web Manager webmgr@arts.gov

NEH on the Road Exhibition Grants

National Endowment for the Humanities
 Funding Opportunity Number: 20081231-MR **Closing Date for Applications: Dec 31, 2008**

Archive Date: Jan 30, 2009
Award Ceiling: \$1,000
 These grants support ancillary public humanities

programs to accompany NEH on the Road traveling exhibitions. Typical formats involve lectures, reading and discussion programs, film discussion programs, Chautauqua presentations by scholars, family programs, exhibition tours, or other appropriate formats for reaching the general public. The criterion for review is the degree to which the programs involve humanities experts as presenters in ways that build on the themes of the exhibition. NEH staff evaluate applications and forward recommendations to the National Council on the Humanities. The National Council meets at various times during the year to advise the NEH chairman on grants. The chairman takes into account the advice provided by the review process and, by law, makes all funding decisions.
 Link to Full Announcement http://www.neh.gov/grants/guidelines/NEH_OnTheRoad_GuidelinesForSelectedVenues.html
 If you have difficulty accessing the full announcement electronically, please contact: Division of Public Programs, National Endowment for the Humanities, 1100 Pennsylvania Avenue, N.W. Washington, D.C. 20506 202-606-8269 publicpgms@neh.gov

For a complete list of Funding Announcements, Visit our website: <http://research.ncat.edu>

FUNDED PROPOSALS January 26, 2008—March 14, 2008

| <u>PI</u> | <u>COLLEGE /SCHOOL</u> | <u>PROJECT TITLE</u> | <u>FUNDED AMOUNT</u> |
|--------------------|---|---|----------------------|
| Joseph Monroe | College of Engineering | OFFICE OF NAVAL RESEARCH/HISTORICALLY BLACK ENGINEERING COLLEGE COMMITTEE FUTURE FACULTY FELLOWSHIP: EXPANSION PROPOSAL TO GRANT NO. N00014-01-1-0987 | \$ 501,292 |
| Kunigal Shivakumar | College of Engineering | STRUCTURAL PERFORMANCE OF AFFORDABLE COMPOSITES FOR STEALTHY NAVAL SHIPS | \$ 100000.00 |
| Mannur Sundaresan | College of Engineering | SENSORY SYSTEMS FOR DIAGNOSIS AND PROGNOSIS OF HETEROGENEOUS STRUCTURES | \$ 90,000.00 |
| Travella Free | School of Agricultural and Environmental Sciences | DISCOVER AGRICULTURE | \$ 34,986.00 |
| Alton Thompson | School of Agricultural and Environmental Sciences | EVANS-ALLEN FUNDING FY2008 | \$ 6,728,088.00 |
| Perpetua Muganda | College of Arts and Sciences | BUTADIENE-INDUCED P53 MEDIATED APOPTOTIC SIGNALING | \$ 71095.00 |
| Carolyn Lundrigan | School of Nursing | NC A&T SCHOOL OF NURSING SCREENING AND EDUCATION CLINIC | 2000.00 |



A Productive Experience at A&T

Dr. Salil Desai, Assistant Professor in Industrial and Systems Engineering, calls his experience at A&T “Warm, encouraging, and productive.” Dr. Desai came to A&T in 2004 after receiving his Ph. D in Industrial Engineering from the University of Pittsburgh. Since then he has received numerous honors and awards including this year’s Outstanding Young Investigator Award .

Dr. Desai is also the recipient of several grants from different federal and state agencies—including the Air Force Office of Science Research (AFOSR). This award will be used to establish a scalable nano and micro manufacturing infrastructure for advanced interdisciplinary research, education and training.

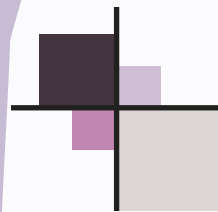


Dr. Salil Desai, Assistant Professor in Industrial and Systems Engineering

This nano-manufacturing equipment is one of a kind within the region and the first among Historically Black Colleges and Universities within the country. He also received a grant to develop a clean room facility to conduct interdisciplinary nano and bio manufacturing research on A&T’s campus. This lab will be showcased to all visitors and is expected to be completed this May. Dr. Desai has also been working on two inventions stemming from his research activity at A&T.

The first, which is patent pending, focuses on the development of a novel scalable manufacturing process that can fabricate features spanning from the nano to micro scale. His second, in active invention disclosure status, pertains to a method of producing bio-polymer microcapsules for drug delivery and regenerative tissue constructs. Multiple corporations, federal and state agencies are interested in this work.

In the future, Dr. Desai plans to explore new avenues in miniaturized manufacturing from a basic research standpoint and extend their impact to a diverse application base.



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