

DRAFT Strategic Research Plan: 2010 – 2015

RESEARCH VISION:

Provide and sustain a strategic environment promoting world-class research, innovation, and scholarship that directly contributes to economic and societal advancement.

RESEARCH MISSION:

Grow and promote the world-class research enterprise at NC State by strategically directing the research environment, cultivating alliances, catalyzing excellence in education and providing assistance to the research community, in order to enable the creation, application, and dissemination of new knowledge and future leaders that influence our state, nation and world.

I. Strategic Research Introduction

NC State's research community and leadership, under the direction of the Vice Chancellor for Research and Graduate Studies, have established a Strategic Research Plan to guide best-practices, processes, and intentioned impact over the next five years of research at NC State. This five-year Strategic Research Plan is designed for flexibility, scalability, and ongoing revision as new critical societal needs arise and NC State areas of research expertise evolve to meet those needs.

The Strategic Research Plan directly supports NC State's mission and vision of transforming lives and improving the human condition, and complements NC State's strategic plans concerning economic development, teaching and extension, and public service.

II. Strategic Research Driving Principles

NC State's research community and leadership have identified cultural characteristics and principles that will guide excellence and a thriving research enterprise at NC State. Our driving principles are:

- 1) A commitment to the greater public good as an engaged land-grant university. Our diverse portfolio of research activities, both basic and translational, must share, at their core, the intent to improve our world. Our research must serve as a foundation for human advancement or must translate into applications that benefit our region, state, nation and world.
- 2) A commitment to a culture of scholarship, innovation and discovery. In order to develop and sustain leading students, scholars, researchers, and staff we must not only promote, but also reward scholarship, innovation and discovery. Vital to a rewarding research experience is mentorship and training. We must provide and promote development opportunities in order for our research community and culture to thrive.
- 3) A commitment to integrating team science into our culture alongside our long standing traditional disciplines. We will proactively address multidisciplinary challenges with multidisciplinary approaches. As real-world needs emerge, we must apply the appropriate science, teams and creativity to solve these challenges. Shoring up our traditional strengths while embracing new research frontiers, will allow us to leverage strong disciplines in unison to create new strengths and new solutions.

III. Strategic Research Goals, Objectives and Strategies

The success of the research enterprise at NC State can be measured by how well we are achieving our University's strategic vision: *"We will transform lives and improve the human condition through innovation and discovery."* Our over-arching research ambition is to be, and to be recognized as, a world-class, collaborative research institution that creatively solves state, national and global challenges. To achieve and advance world-class research at NC State, the following four goals have been identified as essential:

GOAL 1: Build and maintain a research environment that enables, inspires and rewards world-class scholarship, innovation, and discovery.

Objective 1: Retain, reward, and promote our outstanding research students, staff and faculty. Attract new student, staff and faculty leaders to NC State.

Strategy 1: Increase measures for career satisfaction (e.g. internal and external recognition, awards, training and mentorship) in order to retain and support research community including students, staff and faculty.

Strategy 2: Develop a human resources needs assessment and plan of action to sustain and add mission-critical faculty and staff where the need is greatest.

Strategy 3: Plan and carry out strategic cluster hires to bring new and future research leaders to campus.

Strategy 4: Develop and implement programs and opportunities to attract, enroll, and retain world-class students, both undergraduates and graduates.

Objective 2: Build and maintain an optimal research physical infrastructure to support world-class researchers.

Strategy 1: Create Research Facility Task Force to analyze and report on existing facilities, equipment and instrumentation and to develop an improvement plan to upgrade and optimize our inventory.

Strategy 2: Develop online inventory tool (database) of all existing physical infrastructure components so that researchers know what is available, where it exists, and if/how it is available for use.

Strategy 3: Develop High-Priority Needs List of Facilities, Equipment and Instrumentation. Advocate for new sources of funding for purchasing and maintenance (See Goal 3, Obj. 1).

Objective 3: Streamline administrative practices, processes and procedures, and increase transparency and availability of information for same.

Strategy 1: Identify and reduce administrative barriers with driving principles of flexibility and lean, efficient processes.

Strategy 2: Increase collaboration and communication among research administrative units (purchasing, Technology Transfer, SPARCS, contracts and grants, legal counsel). Decrease duplication of effort among same.

Strategy 3: Increase availability of Standard Operating Procedures and Timelines so that the research community knows what to expect when engaged in administrative functions.

Strategy 4: Improve communications and disseminate information through highly publicized, online clearinghouse of research information and research alerts.

GOAL 2: Create and sustain a collaborative, innovative, multidisciplinary research culture at NC State to complement our traditional areas of research excellence.

Objective 1: Increase collaboration among research faculty, Centers and Institutes, Centennial Campus community, external partners, and research administration.

Strategy 1: Identify, communicate and promote the value of partnerships and team research.

Strategy 2: Develop and provide tools to make collaboration easy and efficient.

Strategy 3: Sponsor and host networking events to bring the research community together.

Strategy 4: Develop a Centennial Campus recruitment plan that brings complementary research partners to campus.

Strategy 5: Encourage and reward collaboration and partnership successes.

Objective 2: Increase support for the innovation process from discovery to market.

Strategy 1: Create an inventory of the existing innovation resources available on campus and communicate these to our research community.

Strategy 2: Develop an Acceleration of Start-ups Task Force to lead the establishment of a start-up accelerator on campus.

Strategy 3: Create University angel funding or gap funding to help launch NC State startups.

Strategy 4: Track and report economic development impact of NC State's startup companies and commercialization activities (products available to the public, jobs created, royalties generated, etc.)

Objective 3: Develop multidisciplinary research focus areas in addition to strengthening our traditional disciplines. Strategic research focus areas will reflect state, national and global needs where NC State's existing and emerging areas of expertise can make the greatest impact. Research focus areas will be flexible and scalable in order to address shifts in societal needs and research capabilities at NC State.

Strategy 1: Identify Strategic Research Areas based on NC State's existing and emerging research strengths (derived through collection and analysis of data) and our abilities to solve current critical societal needs. Then, work with researchers to identify critical research questions, or "Grand Challenges" that naturally fall under each Strategic Research Area, allowing us to draw together a wide range of disciplines to address a specific issue (e.g. Alternative Energy Solutions; Cyber-feminism; Cognitive Modeling of Print Media to Improve Textbook Efficacy; etc).

Strategy 2: Develop external advisory boards for each Strategic Research Area to build partnerships and forecast emerging needs.

Strategy 3: Communicate the advantages, benefits, and activities of Strategic Research Focus Areas and encourage new collaborations among traditional disciplines where appropriate.

Strategy 4: Provide research support in the form of Strategic Research Initiatives funding to encourage and enable collaborative science in these areas.

GOAL 3: Increase and optimize research funding and development to sustain the research environment.

Objective 1: Increase flexible/unrestricted research funds.

Strategy 1: *Work with University Advancement to develop an Endowed Research Account or Foundation.*

Strategy 2: *Pursue new sources of support for purchasing and maintaining world-class research facilities, equipment and instrumentation.*

Objective 2: Increase research funding, sponsorship and partnerships.

Strategy 1: *Increase awareness of existing research funding, sponsorship and partnership opportunities.*

Strategy 2: *Increase NC State's participation in the development of research funding, sponsorship and partnership opportunities by building advisory boards and directly interacting with Federal Agencies, state representatives, Center members, and industry.*

Strategy 3: *Increase use of Master Agreements.*

Strategy 4: *Increase funding resources and training for the research community (e.g. What does a superior proposal look like? Online availability of commonly used proposal institutional data. Grant writing resources. Etc.)*

Strategy 5: *Increase mentorship programs.*

Strategy 6: *Evaluate and optimize proposal development human resources to most effectively support the research community.*

Objective 3: Optimize existing funding for research.

Strategy 1: *Identify areas for financial consolidation and collaboration.*

Strategy 2: *Inventory and use shared facilities, equipment and instrumentation. Build an online inventory of all existing resources so that researchers know what is available, where it is and if/how to use it (See Goal 1, Objective 2).*

GOAL 4: Increase awareness of NC State’s research enterprise on a state, national and global level.

Objective 1: Promote strategic research areas where NC State researchers and expert partners will create a preeminent alliance to serve critical global needs.

Strategy 1: Create Strategic Research Areas and work with faculty to develop questions or “Grand Challenges” that impact society and naturally fall under each Strategic Research Area, allowing us to draw together a wide range of disciplines to address a specific issue (e.g. Alternative Energy Solutions; Cyberfeminism; Cognitive Modeling of Print Media to Improve Textbook Efficacy; etc). This Objective fully discussed in Goal 2.

Strategy 2: Disseminate our results from Strategy 1 using press placement, scientific journal articles, and global media outlets to increase awareness of NC State’s impact on society.

Strategy 3: Partner with internationally esteemed institutions that complement our research expertise and share our core values of transforming lives and responding to societal needs.

Objective 2: Increase activity on national and international committees, academies, and organizations.

Strategy 1: Proactively nominate our world-class researchers for awards, fellowships and for international service. Make the nomination process available online.

Strategy 2: Reward and support committee and service participation.

Strategy 3: Create space and time for engaged researchers to participate in committees, Federal Agency review panels and advisory boards.

Objective 3: Increase research press placement and media attention.

Strategy 1: Increase communications internally to keep account of, and then promote consistently, the successes, publications, and breakthroughs that occur daily within the research enterprise.

Strategy 2: Work with Chief Communications Officer and University Communications Team to develop a Visibility Plan for Research and to ensure that NC State research is appropriately represented in University key messaging.

Strategy 3: Review and analyze increased use of broadcast and web media in addition to traditional print media.

REVIEW NOTES: *This updated document contains comprehensive input and feedback from:*

- *Research and Graduate Studies Retreat held August, 2009*
- *URC/ORC/SRC meeting held on October 21, 2009*
- *Research Administration Retreat held on February 11-12, 2010*