Dear Friends of Clemson,

Clemson University launched a strategic planning process at what some would have said was the worst possible time — on the heels of the Great Recession and historic state-funding cuts. But we realized that we could spend our time and energy worrying or we could spend our time and energy planning so that we could control our own destiny. We chose the latter, and this plan is the result.

It is a realistic plan for these economic times, but it’s also aggressive. It invests in priorities that will enhance the quality of a Clemson education, support the state’s educational and economic development goals, and address some of the greatest challenges of our time.

We call our plan a “road map” because, even in this era of global positioning devices, a good road map is the perfect tool for those who know where they want to go but recognize that there can be many routes to the same destination. The Clemson 2020 Road Map is intended to be a flexible, dynamic document, not a dust catcher tucked away on a shelf. Its core goals won’t change, but priorities and funding strategies will as we respond to opportunities and changing economic conditions.

So where do we want to go? In 2020, Clemson will be a top-20 public university, a national model for student engagement, a creator of jobs and solutions to problems, and a great place to work, study and live. That’s a tall order, and it will take all of Clemson’s legendary “determined spirit” to carry it out.

Let’s get started.

James F. Barker, FAIA
VISION
Clemson will be one of the nation’s top-20 public universities.

GOALS
• Provide talent for the new economy by recruiting and retaining outstanding students and faculty and providing an exceptional educational experience grounded in engagement
• Drive innovation, through research and service, that stimulates economic growth, creates jobs and solves problems
• Serve the public good by focusing on emphasis areas that address some of the great challenges of the 21st century — national priorities such as health, energy, transportation and the environment

STRATEGIC PRIORITIES
• Enhance student quality and performance
• Provide engagement opportunities for all students
• Attract, retain and reward top people
• Build to compete — facilities, infrastructure and technology
INTRODUCTION AND RECAP — THE FIRST CLEMSON ROAD MAP

Ranked among the nation’s top-25 public universities, Clemson is a land-grant, science- and engineering-oriented research institution dedicated to individual student success. *U.S. News & World Report* ranked Clemson 11th among all public and private institutions for its “strong commitment to undergraduate teaching” and 4th among “up and coming” universities, defined as those that have made “the most promising and innovative changes in academics, faculty, students, campus or facilities.” A study by SmartMoney.com ranked Clemson’s return-on-investment 6th among 50 schools in its analysis of lifetime earnings vs. tuition paid.

These successes are due in large measure to an academic plan — informally known as the “Road Map” — adopted a decade ago. Its hallmarks included

- **commitment to students** — through a new Academic Success Center, summer reading program, first-year experience programs, Creative Inquiry and other engagement programs, the Bridge to Clemson transfer program, cyberinfrastructure upgrades, and improved housing and recreation facilities;

- **investment in academic resources** — such as new faculty, more library resources, a top-five ranked high-performance computing environment and 1 million square feet of new or renovated space, including facilities for computer science, packaging science, advanced materials, bioengineering, and at agricultural research and education centers statewide;

- **focus** — identifying eight emphasis areas that aligned with external funding opportunities and state economic development priorities: advanced materials, automotive and transportation technology, biotechnology and biomedical science, family and community living, general education, information and communication technology, leadership and entrepreneurship, and sustainable environment;

- **research-driven economic development initiatives** — including
  - the Clemson University International Center for Automotive Research in Greenville, a 250-acre automotive and motorsports “technopolis” named 2009’s emerging technology park of the year;
  - the Clemson University Advanced Materials Center in Anderson County, with state-of-the-art equipment including one of the nation’s most advanced electron microscope facilities and a high-performance computing infrastructure currently ranked among the top five at academic institutions nationally;
  - the Clemson University Restoration Institute in North Charleston, which will house a unique wind turbine drivetrain testing facility — funded by a $45 million U.S. Department of Energy grant — that could make South Carolina the hub of the wind energy industry.

The new Clemson 2020 Road Map is built on that strong foundation.
Key to the success of the 2020 Road Map is attracting an outstanding student body, providing a high-quality educational experience and growing enrollment in areas that support economic development.

The No. 1 choice of the state’s best high school students — the Palmetto Fellows — Clemson has a strong track record of attracting, retaining and graduating outstanding students. The current freshman class has an average SAT of 1230, and half graduated in the top 10 percent of their high school class.

Strategies to improve student quality and performance will include

• implementing a strategic enrollment management plan to increase the quality and diversity of the undergraduate and graduate student body; increasing enrollment in key focus areas, such as science, engineering and technology majors; and determining capacity for enrollment growth to increase access to a Clemson education;
• expanding efforts to enhance student performance by introducing new teaching and delivery methods; increasing student competitiveness for national awards; providing more opportunities for students to attend and present at national conferences and symposia; and continuing to improve retention and graduation rates;
• offering more competitive scholarships and graduate stipends to keep the best and brightest students in state and continue to attract talent from other states and nations to meet South Carolina’s workforce needs.

This strategic investment priority responds directly to demands from industry for a larger knowledge-based workforce.

• Innovation in science produced approximately half of America’s economic growth over the last 50 years, and science/technology jobs are expected to grow at twice the rate of our economy between now and 2018, according to the National Science Foundation and the Georgetown University Center on Education and the Workforce.
• According to the Bureau of Labor Statistics’ employment projections through 2018, the fastest growth occupation areas will be in technology-related fields generally requiring a bachelor’s degree or higher.
• Statistics from the Southern Region Education Board indicate that the fastest growing job sectors will require education beyond high school — led by projections of a 22 percent increase in job openings requiring a Ph.D.
The fastest-growing job sectors will require education beyond high school.
Providing every student with a real-world, problem-solving, creative engagement or leadership opportunity is a core concept of the 2020 Road Map.

The 21st century demands college graduates who are well-schooled in disciplines but also creative and entrepreneurial — graduates who are prepared to start careers with established companies or launch their own businesses. Participation in rigorous, structured engagement programs helps students develop creativity, problem-solving and leadership skills; learn to work in teams, think critically and communicate effectively; and appreciate the value of diversity.

Specific objectives in the Road Map are to

• teach differently to build a culture of creativity that stimulates new ideas;
• incorporate engagement and leadership throughout student life programming;
• add or enhance two living-learning communities per year;
• offer course credit for structured engagement experiences;
• double the number of students participating in Creative Inquiry, service-learning and study abroad;
• use the University as a laboratory, engaging students in running the university machine through internships and internal cooperative education experiences;
• nurture creativity, critical thinking, communications skills and ethical judgment in students.

This strategic investment priority responds directly to employer demands.

According to a report by the National Leadership Council for Liberal Education and America’s Promise and the Association of American Colleges and Universities, 63 percent of employers say that many college graduates lack essential skills needed to succeed in today’s global economy.

Employers urged colleges and universities to focus on cultivating the very skills that Clemson’s engagement strategy addresses:

• Cross-disciplinary knowledge and advanced communication and analytical skills
• Opportunities to apply those skills to real-world problems
• Teamwork skills
• Creativity and innovation

The Road Map cornerstone of engagement will make Clemson students more academically successful and marketable after graduation.

At least five studies have found a strong positive correlation between student engagement, retention and grades. Studies also have shown that membership in residential learning communities has a positive impact on students’ academic achievement and social adjustment.

Clemson freshmen in living-learning communities have a higher grade-point average and higher freshman-to-sophomore retention rates than their peers in other campus housing or living off campus.

In addition, 76 percent of Clemson students who participated in study abroad said they acquired skills that influenced their career path; 62 percent said the experience ignited a career direction.

The Road Map’s focus on internships and co-ops will translate into better job prospects for graduates. The Wall Street Journal reports that more entry-level positions are being filled by people who formerly interned with the companies doing the hiring — up from 30 percent in 2005 to 40 percent last year.

Finally, student engagement projects can have a significant impact on local economies and quality of life. In 2009-2010, the Office of Civic Engagement estimated that 7,500 Clemson students participated in community service projects or volunteer work, contributing nearly 45,000 hours valued at approximately $1.76 million.
A 2010 poll of 1,500 CEOs identified creativity as the No. 1 leadership competency of the future.
Because a university is only as good as its faculty and staff, a Road Map priority is to recruit, retain and reward top people, while continuing to manage administrative and support costs through attrition, strategic outsourcing and improvements in technology and processes.

Competitive Compensation
Clemson will self-fund an annual performance-based compensation plan that rewards outstanding performance, provides incentives for people to generate revenue or cut costs, and recognizes faculty and staff who have earned significant external awards and honors.

Faculty Hires
The University also plans to add roughly 85 new faculty over the next five years — about 15 to 20 per year — in key focus areas.

Searches are under way to fill seven prestigious endowed chairs funded through South Carolina’s innovative SmartState program. Established by the state Legislature and funded with lottery revenue, the program funds endowments for research centers in knowledge-intensive economic clusters such as biotechnology, automotive engineering and advanced materials. Universities must raise nonstate, dollar-for-dollar matching funds to earn the state match. To date, the program has provided $45 million to Clemson for support of 16 endowed chairs in 13 Centers of Economic Excellence.

While maintaining support for strong programs in all eight emphasis areas, Clemson will add faculty or teams of researchers in areas that align with state economic development and national priorities, such as

- sustainable environment: wind resources, water resources, power systems, energy/green campus;
- health/biomedical and biotechnology: biomedical engineering, molecular/infectious diseases, smart hospitals, food systems, functional genomics, translational animal medicine;
- transportation: systems engineering, mechanical/automotive design, sustainable infrastructure;
- advanced materials: optoelectronics, metals, polymers/composites;
- information technology: high-performance computing, cyberinfrastructure, human-centered computing.

Champions
Successes at the CU-ICAR and CURI innovation campuses demonstrate the value of having dedicated, focused leaders for high-profile, critical initiatives. Over the next five years, similar “champions” will be recruited to ensure the success of large economic development projects, major revenue opportunities and mission-critical programs such as summer programs, distance/online education and student engagement.
Clemson will add about 85 faculty in key focus areas.
One of the largest and most visible components of the Road Map will be a comprehensive capital improvement plan to “fix what’s broken” and protect existing assets, leverage information technology to improve research productivity and administrative efficiency, and provide nationally competitive facilities.

The capital improvement plan is an “enabler” that will help Clemson meet its goals in student and faculty recruitment, student performance and increased student engagement, research and outreach.

A 2006 study concluded that “facilities students see — or do not see — on a campus can mean the difference between whether they enroll or not.” According to the study conducted by David Cain and Gary L. Reynolds, The Impact of Facilities on Recruitment and Retention of Students, 73.6 percent of respondents named facilities related to their majors as “extremely important” or “very important” in choosing a college.

Constructing more student residence facilities will increase opportunities for students to live on campus — particularly in communities that foster engagement and learning — which will enhance student performance and success.

Compared to students who live off campus, students who live on campus have higher

- freshman-to-sophomore retention rates (89.1 percent vs. 83.1 percent),
- freshman grade-point averages (3.11 vs. 2.97, which is the difference between keeping and losing a LIFE Scholarship),
- graduation rates (86.3 percent vs. 80.3 percent).

First-year students in living-learning communities do even better, with a 93.4 percent retention rate and 3.27 grade-point average. These statistics mandate that Clemson provide the “on-campus advantage” for more students.

Finally, investments in digital resources and information technology will support academic and research initiatives, create opportunities to generate more revenue, and increase staff productivity and further reduce administrative costs. Projects currently under way will add

- a permanent, stand-alone home for the Class of 1956 Academic Success Center;
- a 120,000-square-foot life science center to support 21st century agriculture, biotechnology and environmental sustainability programs;
- an expanded and renovated Lee Hall, home to the University’s nationally recognized architecture program;
- enhancements to athletics facilities.

Additional capital investment priorities over the next five years follow:

**STUDENT PORTFOLIO**

- Redevelop the former Douthit Hills family housing area through a public-private partnership that will include student housing, retail and mixed-use facilities
- Launch phase one of the core campus redevelopment, to include replacing the final section of Johnstone residence hall and Harcombe Dining Hall (built 38 years before this year’s freshmen were born)
- Develop a Greek village
- Develop additional recreational facilities
ACADEMIC AND RESEARCH PORTFOLIO
- Renovate Sirrine Hall and build a new center for business education
- Build a new engineering facility with flexible teaching and research spaces, smart classrooms and multi-purpose rooms that support student engagement and collaborative teamwork
- Renovate Freeman Hall for industrial engineering undergraduate programs and the department’s industry-supported master’s program (which will be the source of revenues for the project)
- Build a graduate education center at the Clemson University Restoration Institute
- Build a new facility for the architecture and historic preservation programs in Charleston to accommodate demand and allow for growth

ATHLETICS PORTFOLIO
Complete the next phase of a major facilities plan launched in 2003, funded from private gifts, athletics-generated revenue and grants, to include the following enhancements:
- Pedestrian bridge, Championship Plaza and enhancements at Riggs Field soccer stadium
- Indoor football practice facility
- New indoor courts, covered outdoor seating and landscaping enhancements at tennis complex
- Additional practice facility at Littlejohn Coliseum
- WestZone oculus, concourse expansion, dining facility and other upgrades to Memorial Stadium
- Players facility and “lobby of legacy” at Doug Kingsmore Stadium

STEWARDSHIP PORTFOLIO
- Double annual expenditures on deferred maintenance
- Complete phase one of a utility system upgrade, including phasing out the use of coal within five years
- Address major HVAC and air-quality issues in some of the University’s most heavily used classroom and administrative buildings (Daniel, Lehotsky, Poole, Martin, Barnett and Sikes)

TECHNOLOGY PORTFOLIO
- Provide support systems that reduce transaction costs and increase productivity, including a new student information system and enhanced business systems
- Increase the number and quality of technology-enhanced classrooms and conference facilities
- Leverage information technology capabilities to host or provide services for other colleges and universities
- Enhance digital library resources and technology
Moving from goals to implementation requires resources, but the traditional public higher education funding model isn’t as reliable as it once was. In the old model, universities made investments — and received state appropriations or raised tuition to pay for them. These two primary sources of funding were directly correlated: If appropriations went down, tuition went up.

State appropriations and tuition will always be Clemson’s leading source of funds for core educational and service programs, but more and more, enhancements will need to be funded through entrepreneurialism to generate more nontraditional revenue and targeted internal reallocations — what Clemson calls “divest to invest.”

## BUDGETING AND PLANNING IN A “NEW NORMAL” FUNDING ENVIRONMENT

### SPECIFIC DIVESTMENT AND REALLOCATION TARGETS

- **Reduce personnel costs** over time through attrition and selective outsourcing of noncore functions, and view every vacant position as one that could be reallocated or eliminated to fund the plan
- **Reduce administrative and institutional support costs** through state regulatory reform measures and improvements to internal administrative policies and processes
- **Reduce or eliminate state funding for units that can generate alternative revenues**

### NEW REVENUE TARGETS

- Complete the current $600 million capital campaign
- Double net revenue from online and distance education
- Increase departmentally generated revenues by 50 percent
- Increase summer school net revenue by 50 percent
- Develop $25 million in strategic partnerships with new corporations, private companies, and other universities and colleges
- Increase research expenditures by 50 percent
- Leverage information technology capabilities to host or provide services for other colleges and universities

### FUNDING THE 2020 ROAD MAP

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Accountability is built into the Clemson 2020 Road Map. A quarterly “report card” will continually monitor results, using nationally standardized surveys, peer benchmarking, program-specific data sources, and internal metrics and surveys. Sources will include the Collaborative on Academic Careers in Higher Education (COACHE), Core Alcohol and Drug Student Survey, Educational Benchmarking Inc. Housing Survey, ETS Proficiency Profile, Great Colleges to Work For — Chronicle Survey, National Survey of Student Engagement, NCAA Rankings and Data Comparisons, Student Satisfaction Inventory and U.S. News & World Report data.

**SELECTED 2010 BASELINE METRICS**

**Student Quality and Performance**
- Average freshman SAT — 1231
- 51% of freshmen in top 10% of high school class
- 90.5% freshman retention rate
- 77.4% graduation rate
- 21 Fulbright Scholars, 4 Goldwater Scholars and 11 National Science Foundation Fellows enrolled

**Student Engagement and Leadership**
- Creative Inquiry Teams — 275 in Fall 2010, 303 in Spring 2011
- Nationally ranked for Living-Learning Communities
- 76% of seniors have done community or volunteer work
- 65% of seniors completed internships or co-op programs
- 945 participated in 15 Living-Learning Communities

**Top People**
- 430 faculty in focus areas
- 16/1 student-to-faculty ratio
- 96% full-time faculty
- 16 SmartState endowed chairs
- 21 NSF CAREER Award winners

**Competitive Facilities and Infrastructure**
- Data Center ranks second among public universities, Top 500 Supercomputing
- 286 technology-enhanced classrooms
- $16.5 million (FY10) in research awards using high-performance computing
- 35 private partnerships involving cloud services and/or cyberinfrastructure development