Roadmap

from our Strategic Planning Sessions
Winter 2013

Developed by Representatives of the Faculty, Students, and Staff in the VCU School of Engineering

At VCU, we're motivated, creative and intelligent leaders, using our imagination to dream bigger and our collective strengths to make them real. Whether it is an engineering student whose undergraduate research project improves water quality in developing nations, a junior journalism major who covers the presidential campaign for a national newspaper or a life sciences graduate student who is restoring a threatened species to Virginia rivers — we make VCU great and the world even better. We have what it takes to make it real.

From the VCU website

VCU School of Engineering
Strategic Plan Development Methodology:

Step 1:	Logistics planning	Dec 2012
Step 2:	Strategic discovery	Jan 2013
Step 3:	Strategic huddles	Feb – Mar 2013
Step 4:	Constituency vetting	Mar – Apr 2013
Step 5:	Strategic communications	May 2013
Step 6:	Action planning teams	Jun – Sept 2013

VCU School of Engineering

Mission Statement

FY 2013 – 2020 Strategic Themes

- student centered learning
- research that makes a difference
- collaborative creative culture
- global real world perspective

VCU Quest for Distinction Core Values

- accountability
- achievement
- freedom
- innovation
- service
- diversity
- collaboration
- integrity

2013 – 2020 Strategic Themes

1. Build upon our legacy of student-centered learning to prepare the inter-disciplinary leaders of tomorrow
2. Conduct research that makes a positive difference in our community and human kind
3. Create and nurture a highly collaborative, creative, innovative, and entrepreneurial culture
4. Provide a global, real-world perspective of engineering in the learning experience

2013 – 2020 Strategic Themes

Theme 1: Build upon our legacy of student-centered learning to prepare the leaders of tomorrow

Key Initiatives:

1. Market the academic quality, opportunities, and uniqueness of the VCU School of Engineering
2. Recruit and retain excellent students, faculty and staff committed to student-centered undergraduate and graduate experiences
3. Provide interactive instruction and facilities
4. Create unique programs and opportunities within and beyond our curriculum and capitalize on them
5. Embrace and leverage our diversity in academics, cultures, gender, ethnic backgrounds, educational backgrounds, etc.

2013 – 2020 Strategic Themes

Theme 2: Conduct research that makes a positive difference in our community and human kind

Key Initiatives:

1. Foster a climate of interdisciplinary translational research and development
2. Provide investment, mentorship, and rewards for faculty development
3. Elevate graduate student quality, performance, and culture
4. Build strategic regional relationships
5. Build multi-disciplinary areas in energy, engineering for healthcare, biomedical informatics, applied materials, and cyber security

2013 – 2020 Strategic Themes

Theme 3: Create and nurture a highly collaborative, creative, innovative and entrepreneurial culture

Key Initiatives:

1. Provide a roadmap and infrastructure to stimulate entrepreneurship
2. Engage regional and global businesses in research and education
3. Ensure that our new faculty hires are targeted and deliberate
4. Nurture communications and shared governance
5. Enhance collaborative teaching and education experiences

2013 – 2020 Strategic Themes

Theme 4: Provide a global, real world perspective of engineering in the learning experience

Key Initiatives:

1. Improve international research and experiences
2. Educate and engage students and faculty on engineering challenges and implementation issues across the world
3. Foster and build relationships with international universities and corporations
4. Create a comprehensive global awareness and immersion program

Strategic Themes with Key Initiatives and Tactics in Detail

Theme 1

Build upon our legacy of student-centered learning to prepare the leaders of tomorrow

Key Initiatives Summary:

1. Market the academic quality, opportunities, and uniqueness of the VCU School of Engineering
2. Recruit and retain excellent students, faculty and staff committed to student-centered undergraduate and graduate experiences
3. Provide interactive instruction and facilities
4. Create unique programs and opportunities within and beyond our curriculum and capitalize on them
5. Embrace and leverage our diversity in academics, cultures, gender, ethnic backgrounds, educational backgrounds, etc.

Theme 1

Build upon our legacy of student-centered learning to prepare the leaders of tomorrow

Key Initiative:

1. *Market the academic quality, opportunities, and uniqueness of the VCU School of Engineering*

Tactics:

a. Build deeper relationships with high schools & community colleges

b. Make better use of new media tools

c. Publicize faculty, student, and alumni awards and accomplishments

d. Create and publish annual reports to the key constituencies of our school

e. Strategically market to peer academic institutions for recruitment and national school rankings

Theme 1

Build upon our legacy of student-centered learning to prepare the leaders of tomorrow

Key Initiative:

2. *Recruit and retain excellent students, faculty and staff committed to student-centered undergraduate and graduate experiences*

Tactics:

a. Define endowed funding priorities
b. Investigate internal and external salary equity issues, and take appropriate action
c. Incentivize faculty to participate in undergrad student experiences
d. Recruit faculty and staff that are committed to student centered education
e. Leverage resources to enhance teaching excellence

Theme 1

Theme 1: Build upon our legacy of student-centered learning to prepare the leaders of tomorrow

Key Initiative:

3. *Provide interactive instruction and facilities*

Tactics:

a. Create and implement quality teaching assessment methods
b. Ensure compulsory teaching courses for junior faculty and those with poor evaluations
c. Create projects funded from teaching grants
d. Develop more reconfigurable classroom space that fosters student-centered learning
e. Create gathering spaces that promote student interaction
f. A student-faculty ratio that promotes student-centered learning

Theme 1

Build upon our legacy of student-centered learning to prepare the leaders of tomorrow

Key Initiative:

4. *Create or leverage unique programs and opportunities within and beyond our curriculum and capitalize on them*

Tactics:

a. Leverage current and/or create new multidisciplinary activities and centers of excellence
b. Develop and implement programs to enhance leadership skills
c. Deepen experiences provided in the honors program
d. Encourage extra curricular experiences to enhance graduation portfolio
e. Create a co-op program for undergraduate studies
f. Continue and explore distance learning opportunities

Theme 1

Build upon our legacy of student-centered learning to prepare the leaders of tomorrow

Key Initiative:

5. Embrace and leverage our diversity in academics, cultures, gender, ethnic backgrounds, educational backgrounds, etc.

Tactics:

a. Create a baseline diversity map that provides us with a direction to improve

b. Publicize our current diversity strengths and address our weaknesses

c. Leverage our current diversity for recruitment through enhanced use of new media

d. Enhance and promote academic diversity

Theme 2

Conduct research that makes a positive difference in our community and human kind

Key Initiatives Summary:

1. Foster a climate of interdisciplinary translational research and development
2. Provide investment, mentorship, and rewards for faculty development
3. Elevate graduate student quality, performance, and culture
4. Build strategic regional relationships
5. Build centers of excellence in strategic research areas in energy, engineering for healthcare, biomedical informatics, applied materials cyber security, and big data

Theme 2

Conduct research that makes a positive difference in our community and human kind

Key Initiative:

1. *Foster a climate of interdisciplinary translational research and development*

Tactics:

a. Institute seed funding for School of Engineering faculty collaboration with other VCU schools

b. Encourage multiple advisors for dissertations

c. Enhance experience of student R&D projects

d. Strengthen our relationship with the VCU Medical campus

e. Align facilities & lab space that facilitate interdisciplinary research

f. Influence actions to improve technology transfer

Theme 2

Conduct research that makes a positive difference in our community and human kind

Key Initiative:

2. *Provide investment, mentorship and rewards for faculty development*

Tactics:

a. Start internal faculty development grants
b. Consider creating a faculty development fund
c. Encourage a dialogue on faculty sabbaticals
d. Provide additional coordination and infrastructure for grant writing
e. Mentor faculty on research, service, and teaching

Theme 2

Conduct research that makes a positive difference in our community and human kind

Key Initiative:

3. *Elevate graduate student quality, performance and culture*

Tactics:

a. Develop a recruitment plan to attract higher quality applicants
b. Institute competitive stipends for graduate students
c. Improve the timeliness of our graduate student offers
d. Require publications and teaching experience for Ph.D. students
e. Require a minimum of three years full time on-campus research effort for Ph.D. candidates

Theme 2

Conduct research that makes a positive difference in our community and human kind

Key Initiative:

4. Build strategic regional relationships

Tactics:

a. Define our strengths, refine our story, and share it
b. Develop regional partnerships to create a graduate student research pipeline
c. Compile and promote our research strengths and industrial research contracts
d. Work with local investors and businesses to keep technology in the region
e. Enhance our external research experiences for students

Theme 2

Conduct research that makes a positive difference in our community and human kind

Key Initiative:

5. *Build multi-disciplinary areas in energy, engineering for healthcare, biomedical informatics, applied materials, cyber security and big data information*

Tactics:

a. Enhance interdisciplinary collaborations between VCU schools and other universities
b. Obtain extramural funding to support center activities
c. Recruit new faculty with expertise in strategic areas
d. Foster the creation of proposals for new infrastructure and facilities to support translational research and development
e. Advertise and promote the activities of the School of Engineering

Theme 3

Create and nurture a highly collaborative, entrepreneurial culture

Key Initiatives Summary:

1. Provide a roadmap and infrastructure to stimulate entrepreneurship
2. Engage regional and global businesses in research and education
3. Ensure that our new faculty hires are targeted and deliberate
4. Nurture communications and shared governance
5. Enhance collaborative teaching and education experiences

Theme 3

Create and nurture a highly collaborative, entrepreneurial culture

Key Initiative:

1. *Provide a roadmap and infrastructure to stimulate collaboration and entrepreneurship*

Tactics:

a. Create a course that would teach the basics of entrepreneurship to undergraduate and graduate students

b. Establish a sustainable model and curriculum for undergraduate business minors

c. Provide opportunities for business leaders and engineering students to collaborate

d. Create a deeper relationship with the National Collegiate Inventors and Innovators Alliance

Theme 3

Create and nurture a highly collaborative, entrepreneurial culture

Key Initiative:

2. Engage regional and global businesses in research and education

Tactics:

a. Establish a database and coordinate relationships among faculty, alumni, and industry

b. Develop an annual research open house for presenting School of Engineering research to industry

c. Establish an educational program for faculty on innovation and entrepreneurship similar to the Kauffman FastTrac, NewVenture or TechVenture programs

d. Create a network of information with regional and global companies, government, and non-government organizations

e. Recruit new faculty members that have strong relationships in regional and global markets, industry and business

Theme 3

Create and nurture a highly collaborative, entrepreneurial culture

Key Initiative:

3. *Ensure that our new faculty hires are targeted and deliberate to support the strategic plan and areas of multi-disciplinary focus*

Tactics:

a. Identify and proactively invite high-performing candidates for distinguished lectures in the School of Engineering

b. Hire an experienced Associate Dean of Research that can have input into the other hires

c. Add entrepreneurship and industry as preferred experiences in appropriate job postings

d. Focus hires based on research and educational themes identified through the strategic planning process

e. Require tech transfer agreement and documentation of research funding (prior and current)

Theme 3

Create and nurture a highly collaborative, entrepreneurial culture

Key Initiative:

4. *Nurture communications and shared governance*

Tactics:

a. Restructure faculty council
b. Work closely with engineering student council and other student organizations
c. Leverage marketing and communications to maximize visibility and our school brand
d. Ensure that students, faculty, chairs, and administration work directly with marketing to announce awards and advancements to increase visibility
e. Capitalize the unique institutes and centers to drive collaboration, innovation, and entrepreneurship

Theme 3

Create and nurture a highly collaborative, entrepreneurial culture

Key Initiative:

5. *Enhance collaborative teaching and education experiences*

Tactics:

a. Create and implement more multidisciplinary courses
b. Work with other schools from the VCU system to stimulate collaboration and education
c. Establish reconfigurable space and encourage team teaching
d. Develop and enhance interdisciplinary opportunities (e.g. 101 labs, tinkering lab, senior design)
e. Create collaborating areas for graduate student interaction

Theme 4

Provide a global, real world perspective of engineering in the learning experience

Key Initiatives Summary:

1. Improve international research and experiences
2. Educate and engage students and faculty on engineering challenges and implementation issues across the world
3. Foster and build relationships with international universities and corporations
4. Create a comprehensive global awareness and immersion program

Theme 4

Provide a global, real world perspective of engineering in the learning experience

Key Initiative:

1. *Improve international research and experiences*

Tactics:

a. Create and fill an international outreach director position

b. Find funds to establish relationships with international companies, providing paid internships for undergraduate students

c. Develop dual-degree programs with foreign universities, requiring an agreement on the curricular and research requirements, as well as onsite work at those universities

d. Create a one credit seminar for presenters to share research projects and global experiences

e. Develop a semester study abroad senior design or graduate program where students are able to absorb real world challenges and gain an understanding to solve global engineering challenges

Theme 4

Provide a global, real world perspective of engineering in the learning experience

Key Initiative:

2. *Educate and engage students and faculty on engineering challenges and implementation issues across the world*

Tactics:

a. Initiate a School of Engineering program to define global and outside of the United States region specific challenges and opportunities

b. Leverage existing resources from the VCU study abroad office and global education office

c. Encourage and support student educational groups (e.g. Engineers Without Borders)

d. Develop new opportunities compatible with curriculum requirements

e. Integrate global learning challenges/issues into course material

Theme 4

Provide a global, real world perspective of engineering in the learning experience

Key Initiative:

3. *Foster and build relationships with international universities and corporations*

Tactics:

a. Develop and/or deepen relationships with companies that offer international internships

b. Continue to develop collaborative degrees, minors and senior projects with universities abroad

c. Make study abroad a feasible option for students and identify universities abroad that can support program exchanges

d. Host conferences and workshops that bring international researchers and engineering professional to our campus

e. Focus on quality over quantity for global partnerships with universities

Theme 4

Provide a global, real world perspective of engineering in the learning experience

Key Initiative:

4. *Create a comprehensive global awareness and immersion program*

Tactics:

a. Create international internships and immersion programs
b. Develop international collaboration with student exchanges
c. Include cultural diversity courses in our curriculum
d. Create a certificate in international engineering studies
e. Link and leverage faculty and professionals to mentor our students on international culture issues

Strategic Dashboard

Metrics:

A. Increase in national ranking in *US News and World Report*
B. Number of peer reviewed published articles per year by faculty and students
C. Number of funded grant dollars per faculty
D. Survey responses on satisfaction ratings by students, faculty, and staff

Thank You

VCU School of Engineering is grateful to its faculty and staff for contributing to this roadmap and extends special thanks to:

Gary Bowlin, Ph.D. Anil Chatterji, Robert Kelly, Krzysztof (Krys) Cios, Ph.D., Isaac Rodriguez, Robert Klenke, Ph.D., Karla Mossi, Ph.D., Stephen Fong, Ph.D., Billie Martin–Lowry, Scott Rash, CFRE, John Speich, Ph.D, and Gary Tepper, Ph.D.