A driving force for change that will enable Clemson University and its partners to lead in the development of creative solutions to significant technical and social challenges of the 21st Century by:

- Creating an intellectual center for collaboration and student engagement
- Providing an agile interdisciplinary science and technology environment for education, discovery, and application of ideas
  - Enhancing the student academic learning experience through immersion in critical-thinking scenarios
- Establishing an interactive learning center for Clemson
- Involving industry, government, and academic partnerships to support programs of mutual interest
- Attracting and retaining the best students for the 21st Century
What are the critical skills our students need?

- Technical depth, multidisciplinary breadth
- Creativity & innovation
- Entrepreneurial outlook
- Communication skills
- Ability to work well as a member of a diverse team
- Global knowledge and experience
- Commitment to lifelong learning

New facility must support
Service Offerings

- Visual Analytics Laboratory
- Technology Demonstration Showcase
- Cross-disciplinary Interactive Learning Environment
- Science and Technology Assessment Laboratories
- Modeling and simulation support including 3D printing
- Control Center that will serve as the building Network Operations Center with links to other partnership R&D facilities
- Academic Resource Center
- University Institutional Effectiveness Assessment
# Timelines

<table>
<thead>
<tr>
<th>Construction</th>
<th>2015</th>
<th>2016</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Jan</td>
<td>Feb</td>
</tr>
<tr>
<td>Complete roof</td>
<td></td>
<td></td>
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<tr>
<td>Complete exterior walls</td>
<td></td>
<td></td>
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<tr>
<td>Install flooring</td>
<td></td>
<td></td>
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<tr>
<td>Complete interior walls</td>
<td></td>
<td></td>
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<tr>
<td>Commission &amp; handover building to WFIC</td>
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<tr>
<td>Complete roof terrace</td>
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<table>
<thead>
<tr>
<th>Audio/Video</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Jan</td>
<td>Feb</td>
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<tr>
<td>Complete AV requirements and detailed design</td>
<td></td>
<td></td>
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<tr>
<td>Perform risk assessment &amp; mitigation</td>
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<td></td>
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<tr>
<td>Finalize requirements &amp; specifications</td>
<td></td>
<td></td>
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<tr>
<td>Processing time for equipment orders</td>
<td></td>
<td></td>
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<tr>
<td>Deliver equipment</td>
<td></td>
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<tr>
<td>Install equipment</td>
<td></td>
<td></td>
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<tr>
<td>Perform system testing, verification &amp; certification</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conduct training on system capabilities and operations</td>
<td></td>
<td></td>
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<tr>
<td>AV systems fully operational for Spring Semester 2016</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Curriculum</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Jan</td>
<td>Feb</td>
</tr>
<tr>
<td>Identify classes offered for Spring Semester 2016</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input WFIC class schedule into 25Live</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assess instructional technology requirements for classes</td>
<td></td>
<td></td>
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<tr>
<td>Conduct interactive faculty sessions on AV systems</td>
<td></td>
<td></td>
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<tr>
<td>Develop strategy for Creative Inquiry (CI) classes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prototype &amp; assess technologies for CI classes</td>
<td></td>
<td></td>
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<tr>
<td>Obtain approval for 2016 CI classes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Develop cross-discipline (XD) curriculum for fall 2016</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coordinate syllabi for fall 2016 XD classes in WFIC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spring Semester 2016 classes begin</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Concept, architecture & building specifications developed in 2012-2014
Summary

• WFIC is about providing the critical skills our students need to be successful in the workplace

• Emphasis on cross-disciplinary collaboration, innovation, & partnerships enabled by advanced technologies

• Provide virtual connectivity to critical assets
**Auditorium**

**Video Wall**
4 x 7 55” 1080p Planar monitors
Interactive Experience
Remote support

**Projector**
3D Laser Projection
Screen 160” x 100”

**Audio**
5:1 Sound system
Assisted Listening

**Integrated Room Scheduler**
Example Interactive Learning Spaces

Monitor
- 6 x 98” 4K Planar monitors
- 3D Visualization
- Interactive Experience
- Local content source
- Remote content source
- Videoconferencing
- Lecture Capture
- Collaboration Local/Remote
- Remote support

Control Panel
- Lighting control
- Audio control
- Source selection
- Remote support

Integrated Room Scheduler
Example Interactive Learning Spaces

Video Wall
- 2 x 4 55” Planar monitors
- 2 x 4 46” 3D Planar monitors

Interactive Experience
- Local content source
- Remote content source

Videoconferencing
- Lecture Capture

Collaboration Local/Remote
- Remote support

Control Panel
- Lighting control
- Audio control
- Source selection
- Remote support

Integrated Room Scheduler
Collaboration Spaces

Monitor
- 70” 1080p Planar monitor
- 3D Visualization
- Interactive Experience
- Local content source
- Remote content source
- Videoconferencing
- Lecture Capture
- Collaboration Local/Remote

Audio
- Assisted Listening

Control Panel
- Lighting control
- Audio control
- Source selection
- Remote support

Integrated Room Scheduler
General Design Features

- Broadband fiber and wireless controllable IT grid
- Raised flooring with modular wiring and air flow systems
- Flexible interconnectivities and modular interior walls
- Connected lighting and media mesh
- Agile interdisciplinary science & technology areas
- Industry/academic partnership areas
- Visualization systems throughout the building including classrooms, laboratories and special project areas
- Programmable software modules
- Virtual connectivity to remote locations
- Centralized control room
Academic quality and experimental learning activities require rigorous science and technology assessments, scholarly research and conventional experiments to support transformation of faculty and student engagements.

- Material Analytics
- Cyber Software Defined Networks
- Medical and Healthcare
- Social Analytics
- Informational Knowledge and Discovery
- Technology Driven Economics and Sustainability
- Architecture Technology and Sustainability
- Computational Biology and Technology Applications
Ongoing Campus Engagement

• Presentations & discussions with deans and associates from CAAH, CAFLS, CBBS, CoES, HEHD, and SoE and many department chairs

• Meetings with faculty on classroom requirements for Spring Semester 2016
  • Formation of academic and research “clusters” or “user groups” for interactive learning spaces in the WFIC

• Meetings with 2020Forward chairs

• Presentations to several other campus entities
2020Forward Meetings

- Attended town hall meetings
- Conducted follow-up meetings with chairs
  - Ellen Granberg, Chair, 2020Forward
  - Denise Anderson, Chair, Undergraduate Education, Problem-based Learning and Interdisciplinary Majors Committee
  - Melur “Ram” Ramasubramanian, Chair, Research Prioritization Committee
  - June Pilcher, Chair, Global Engagement Committee

Identifying opportunities for the WFIC to support 2020Forward
Meetings with Campus Entities

• Organization of Academic Department Chairs
• Faculty Senate
• Student organizations
  – Undergraduate Student Government
  – Innovation, Design, and Entrepreneurship Among Students (IDEAS)
  – Design and Entrepreneurship Network (DEN) program
• Office of Teaching Effectiveness and Innovation
• Office of Institutional Effectiveness and Assessment
• Academic Technology Council
• Clemson Computing and Information Technology
• Education Outreach and Workforce Development
• Spiro Institute Board
• Sonoco Institute
• Others
Academic Offerings

• Interactive Learning
• Student Engagements
• Partnerships and Scholarly Research
• Technology Demonstrations
• Creative Inquiry and Special Projects
• Collaboration Across Disciplines
• Creativity and Emerging Technologies
• Virtual Utilization of Interactive Infrastructure
• Entrepreneurial Leadership Development
Classroom Requirements & Cluster Formation

• Captured preliminary classroom requirements in meetings with faculty
  – Activity Coordination Worksheets distributed to faculty
  – Follow-up meetings conducted to analyze requirements

• Clusters identified based on emerging academic themes
  – Letter of invitation sent out to form clusters
  – Conducting ongoing cluster meetings
  – Transitioning to Cluster Coordination Template to guide discussions and identify space requirements
Spaces

The Watt Family Innovation Center

Educational and Research Spaces

<table>
<thead>
<tr>
<th>Identifier</th>
<th>Room Type</th>
<th>QTY</th>
<th>Total SQ Ft</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Auditorium</td>
<td>1</td>
<td>2,781</td>
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<tr>
<td></td>
<td>Interactive Learning Space</td>
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<td>9,993</td>
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<tr>
<td></td>
<td>Collaboration Area</td>
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<td></td>
<td>Ad hoc Space</td>
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<td></td>
<td>Project Room</td>
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<td>Communication Studio</td>
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<td>S&amp;T Analytics</td>
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<td>1,348</td>
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<tr>
<td></td>
<td>Discussion Areas (No Technology)</td>
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<td></td>
<td>Conference Room</td>
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<td>Development Area</td>
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<td></td>
<td>Innovation Center Research Area</td>
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<td>2,100</td>
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<tr>
<td></td>
<td><strong>Experimental Systems, Nano Technologies, Advanced Research, Developments, Special Projects, and Emerging Products</strong></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Partnership Area</td>
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<td>2,000</td>
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<tr>
<td></td>
<td><strong>Studio Developments, Virtual Connectivity Operations, and Support for Founding Innovation Partners</strong></td>
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<td></td>
</tr>
</tbody>
</table>

Support Spaces

<table>
<thead>
<tr>
<th>Identifier</th>
<th>Room Type</th>
<th>QTY</th>
<th>Total SQ Ft</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Command &amp; Control Center</td>
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<tr>
<td></td>
<td>AV Equipment Room</td>
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<td>Power Closet</td>
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<tr>
<td></td>
<td>Data Closet</td>
<td>8</td>
<td>800</td>
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Next Steps

- Continue cluster meetings to work out details
- Start populating the WFIC internal scheduling system with planned classes for the spring 2016
- Set up prototype Collaborative Work Suite in Cooper Library Room 311 to test and familiarize staff and faculty with systems and applications
- Configure Brown Room for faculty orientation during the summer 2015
- Set up the Academic Resource Center for orientation in the fall 2015 as a high priority
- Develop cross-disciplinary minors and projects