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University of Nebraska Medical Center

Global Center for Advanced Interprofessional Learning: The Inter-Professional Experiential Center for Enduring Learning (I-EXCEL)
UNMC and Nebraska Medicine - Exceptional Programs

Nationally Ranked Programs

- 4th in training of primary care physicians
- 9th in training Physician Assistants

The Nebraska Medical Center - 100 Great Hospitals in America | 2014
THE UNMC MISSION

A world leader transforming lives

We are Nebraska Medicine and UNMC

Our mission is to lead the world in transforming lives to create a healthy future for individuals and communities through premier educational programs, innovative research and extraordinary clinical care.
Institute for Quality Improvement

National Goal: Triple Aim* of Healthcare;

✔ **Better Quality of Care**
  Ensure safe, effective & compassionate care for patients through transforming healthcare education.

✔ **Better Population Health**
  Promote better health through emphasis on disease prevention & health promotion.

✔ **Lower Costs of Care**
  Improve quality, safety outcomes of care by improving human performance & effectiveness.

*Berwick – 2007: Institute for Health Care Improvement
Health Education and Health Care Are Rapidly Changing . . .

• Maintaining status quo – will lead to loss of leadership ground

– “What got us here, will not get us there . . .”
Current US Health Care Related Education and System

Outmoded Education System

Too expensive

Focus on pass grade, not competency

Limited skill / proficiency development sites / siloed

Focused on cure, not prevention

Patchy Quality
## UNMC Campus Wide Response

### Stage I: Established working teams with a parallel strategic mission

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<tr>
<th>Team</th>
<th>Leaders</th>
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<tr>
<td>Strategic Oversight Group</td>
<td>(Dele Davies, Kyle Meyer, Julia Sebastian, Michael Ash)</td>
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<tr>
<td>Competency Assessment &amp; Clinical Outcomes</td>
<td>(Kelly Caverzagie, Dean Collier)</td>
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<td>Technical Integration</td>
<td>(Dan Moser, Patti Carstens, Ward Chambers)</td>
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<td>Sustainability</td>
<td>(Michael Dixon, Meg Johnson, Harvey Frankel, Deb Thomas)</td>
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<tr>
<td>Interprofessional (IPE) Development</td>
<td>(Connie Miller, Paul Paulman, Devin Nickol)</td>
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<tr>
<td>Public Relations &amp; Marketing</td>
<td>(Bill O’Neill, Karen Burbach, Tadd, Pullin)</td>
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<tr>
<td>Research &amp; Development</td>
<td>(Alice Schumaker, Mike Wadman, Chris Kratovchil)</td>
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<td>Teaching Academy</td>
<td>(Howard Liu, Greg Karst)</td>
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Current College (Net) Generation (Millenials and Post Millenials)

• 1/3rd of US population
• Do not recall a time when there was no internet
  • “Digital Natives”
  • Can get information
• Majority prefer interactive, experiential learning, not lectures
UNMC Global Center / iEXCEL
Poised to Lead the World

Bold and Visionary Game Changing Approach to Health Education

- **Interprofessional**, interdisciplinary, integrated, experiential simulation and virtual reality training center
  - Focus on interactive and *precision training*
- **Attainment of competency** to enhance performance, effectiveness, quality and *improve outcomes*
  - By demonstrating mastery learning using simulations, virtual reality and repetitive practice (drills)
- Dedicated *Academy of Teachers* to provide the intellectual and logistical support to the center
Proposal

Global destination center for human effectiveness training

• A 125,000 sq. ft. integrated, interprofessional and interdisciplinary center for
  – Health security and proficiency training and education
  – Spanning continuum of learning (*learners at all levels*)
  – Health and human performance improvement

• Strongly supported by teaching faculty and instructional design / virtual reality trained staff

• Inspirational, integrated, community, national and international destination

• Hotbed for creativity and economic development
A truly integrative model

- iExcel
  - Experiential Learning
  - 3D/Virtual Immersive & Holographic Technology

- National Strategic Research Institute
- Nebraska Medicine
- i-EXCEL
- Center for Advanced Surgical Technology
- Center for Health Security
- College of Engineering, Information Science
- Peter Kiewit Institute
- UNMC
- UNAMED
- Tele-education, Tele-health & Tele-presence
- IPE Initiatives
- Clinical Simulation Centers
A Statewide Network Resource

An integrated human performance and effectiveness hub spreading across Nebraska

Access to:
- Professional and Continuing Education
- Clinical and Educational research and
- Defense Department

Potential to also engage other constituents including state colleges, hospitals and clinics
Global Center – “An Integrated Hub”

Co-location of “state-of-the-art” learning technologies

- Simulated healthcare settings
  - Hospital environments
  - Home care
- Telemedicine, tele-education, tele-presence technology
- Integrated network
- Standardized patients
- Accredited Testing Center
- Courses for blended learning – (e.g. Masters in Health Science Teaching and Technology)
Global Center – Accessibility

Limit barriers to usage by all key constituents

- Free to students, residents & faculty
- Readily available to clinical enterprise personnel
- Available to community health professionals and care delivery systems
- Low barrier to usage by community, regional & national groups
- Open collaboration spaces
- Mobile visualization & broadcast capabilities
- Mobile units across region
Global Center Sustainability

Continuous intellectual growth, ongoing innovation & remaining in a leadership position:

- State support of core academic program operations
- Philanthropic planning and construction investment(s)
- Strategic Industry Partnerships (Apple, IBM, EON, MS . . )
- UNeMed licenses through intellectual commercialization
- Licensing of 3D/VIR content
  
- Partnerships with the United States military, (STRATCOM, WPAFB)
- Collaborative university research grants and contracts
- Edutainment, educational gaming and app development
- Strategic partnerships (UNK, UNL, UNO)

- Federal Center for Health Security & Biomedical Preparedness
## Center Project Scope

### State of the Art: The iEXCEL Core Academic Center

<table>
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<tr>
<th>Facility Interconnectivity Preliminary Plan</th>
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<tr>
<td><strong>Floor 1:</strong> Space, equipment for virtual immersive reality, standardized patients, educational interactive online modules, virtual hospital and virtual clinics (rural health, urban health, telehealth)</td>
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<tr>
<td><strong>Floor 2:</strong> Virtual endoscopic, robotic &amp; minimally invasive surgical procedure simulation / fresh tissue procedural learning &amp; demonstration units</td>
</tr>
<tr>
<td><strong>Floor 3:</strong> Training large teams of interdisciplinary health providers, media training, interactive learning walls, collaboration spaces for simulation and virtual reality experts, instructional design experts, industry partners, military partners, media rooms for tele-education, tele-presence, tele-health</td>
</tr>
</tbody>
</table>

**Program planning, development and recruitment**
# Sources and Uses of Funds

## iEXCEL Core Academic and BCU Activities

### CONSTRUCTION
(academic & BCU programs)

- Construction/Planning
- Advanced Technology
- Design/Site Prep

**TOTAL** $102M

State Funds (LB532) $25M
Private funds $77M
Federal funds $TBD

### OPERATING
(academic & BCU programs)

- Facility O&M
- Faculty & staff recruit & support
- Educational program development
- Immersive virtual reality programs
- Educational Materials
- Equipment Fund

**TOTAL** $5.3M
State Funds (LB533) $5.3M

Federal Funds $TBD
Additional Economic Opportunities

Non Core Activities with Positive Economic Impact

• Training contracts – local, federal
• Research grants and contracts, NIH, DOD
• Intellectual commercialization
• Contracts with
  – Commercial medical device manufacturers – training and testing
  – VIR tech companies
Conceptual Perspective of the Global Center Site (Looking West)

- University Tower
- Transplant Center
- Sorrell Center
- College of Nursing
- College of Pharmacy
- Drug Discovery Laboratories
- Lauritzen Ambulatory Center
- Emile Street
- Surgery Center
- North
The Stars Truly Align

- US Educational Trends
- NU Educational Interests
- UNMC Strategic Vision
- UNMC Leader Experience
- UNMC Faculty Alignment
- NE Legislative Interests
- NE Executive Interests
- NE Philanthropic Interests
- US Ebola Requirements
- US Military Requirements
- Global Corporate Interests
- Recruitment Opportunities
In Summary –

The i-EXCEL Global Center for Advanced Interprofessional Learning

- Transform health science learning and health professions competencies
- Improve quality, safety, experience of health care
- Improve health care outcomes
- Improve rural health care access – workforce, tele-health care
- Lower costs of health care delivery, education
- Global innovation hub/ enhance economic development