VCOM Research Retreat 2016
“Mooresville Campus”

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Discipline Chair for Sports Medicine
Team Physician Virginia Tech
Director of Primary Care Sports Medicine Fellowship
Your minds are probably here…
But we’ve got a little work to do first…

Tom Best, MD, PhD

Van Hipp
VCOM Research Activity

- 32% of these submitted to federal agencies (NIH, DOD, NSF, HRSA, AHRQ).
- Almost half (44%) of federal submissions are to NIH.
OMNEE consortium hospital partners

- Osteopathic Medical Network of Excellence in Education.
- 25 partner hospitals in 7 states.
- 6 COM partners in 5 states
  - VCOM, Campbell, Liberty
  - Burrell (New Mexico), Idaho State, U of Incarnate Word (Texas)
- Most partner hospitals are within our core region.
Regional Research Capabilities

OMNEE workforce capabilities

- Over 550 preceptors
- Currently have 345 trainees
  - 335 residents
  - 10 fellows
- Over last two academic years, 23 workshops with roughly 415 participants
  - Ultrasound central line/manual central line
  - Lumbar puncture
  - Suturing and wound closure
  - Joint injection
- Additional 30 hospitals not in OMNEE partnership but are VCOM core training sites or affiliated training sites.

http://www.omnee.net/
A little more “granular”…

Salaries Charged to Research

Internally Funded Research
What’s the “bad” news...

- Current total amount of VCOM funded faculty “research” time for our 3 campuses
  – $2,242,257.00

- Current total amount of extramural funding for “salary support” for our 3 campuses
  – $86,852.00
As a profession we have been slacking...

- NIH budget for manual therapy research was <0.5% of the total budget (2013)
- But there has been unprecedented growth in the use of manual therapies and other “bodywork” treatments...
- ACGME/AOA residency merger
  - Students and residents are undertrained for “clinical research”
- “Schools of Osteopathy” rank last for NIH funding for the 17 types of institutions
  - “Schools of Medicine” received 800 times more funding!
National Institutes of Health (NIH) research funding in 2011 sorted by educational institution type using data extracted from NIH's RePORT (Research Portfolio Online Reporting Tools). The 7 lowest-funded institution types are shown in the inset to increase discrimination clarity, with “Schools of Osteopathy” last. The NIH categorizes osteopathic medical schools as “schools of osteopathy.”
Strategic roadmap to recovery. Key drivers and interventions necessary for the advancement of the reputation of the osteopathic medical profession by means of increased research productivity and scholarly activity at colleges of osteopathic medicine.

Abbreviations: AOA COCA, American Osteopathic Association Commission on Osteopathic College Accreditation; CEU, continuing education unit; COM, college of osteopathic medicine; EBM, evidence-based medicine.
What are the reasons for this?

- Lack of good objective evidence for clinical use of OMT
  - Individualized nature of OMT
    - “standardized” protocols are difficult to create
  - Small numbers of patients enrolled in pilot studies
  - Strength of evidence
  - Number of DOs doing OMT
  - Subjective nature of the “response” to tx
  - Sham treatments
  - Lack of training and funding starting in Osteopathic medical school
Individualized Nature of the Approach to treatment...

- Standardized protocols are difficult
  - Patients with low back pain
    - Pelvis/sacrum vs lumbar spine
    - Muscles vs ligaments vs nerves
    - Viscerosomatic
  - Patients with headaches
    - Trauma history
    - Migraines
    - Sinus headache
Pilot Studies...key to success?

- Many of the current OMM studies are very small
  - 19 studies with 0-24
  - 20 studies with 25-50
  - 10 studies with 51-75
  - 2 studies with 76-100
  - 11 studies with 100+
Small numbers of DOs in clinical practice using OMT...

Ohio, 2002
- 871 physician responses
- 75% had not or had rarely used OMT
  - 44% using none
  - 31% <10 pts/week prior to the survey
  - 25% treated >10/week
  - 6% treated >30/week

National, 1998
- 955 physicians surveyed
- 85% rarely or no OMT use
  - 53.5% have <5% of OMT pts
  - 30.1% have 5-25%
  - Only 6.1% have 76-100%
What to do? Operationalize our Strategic Plan!

- **Strategic Goal 1:** Create a Research Council at VCOM, consisting of the Research Associate Deans at each campus and to include the most successful VCOM researchers.

- **Strategic Goal 2:** Identify, Formalize and Strengthen the Research Focus Areas at Each Campus and Recruit New Faculty Members for Specific Research Focus Areas.
  - Strategic Goal 2a: Create a VCOM-wide Osteopathic Research Focus Group
  - Strategic Goal 2b: Develop Education, Simulation and Missions Research Programs Toward Extramural Funding.

- **Strategic Goal 3:** Invest in Research Focus Areas through New Internal Seed Grants.
  - REAP
  - One Health

- **Strategic Goal 4:** Incorporate Research Design and Data Analysis Methodologies into the Osteopathic Medical Student Educational Experience

- **Strategic Goal 5:** Create a Culture of Innovation and Support for Intellectual Property Development.
## What to do individually?

<table>
<thead>
<tr>
<th>Role</th>
<th>Title</th>
<th>Sponsor</th>
<th>Result</th>
<th>Prime Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>VCOM PI</td>
<td>DOD-NCAA Grand Challenge: Concussion Assessment, Research and Education (CARE) consortium</td>
<td>NCAA/DOD</td>
<td>Awarded</td>
<td>VCOM</td>
</tr>
<tr>
<td>PI</td>
<td>PRE APP: Lymphocyte Proliferation Assay for the Assessment of Post mTBI Neuronal Cell Cycle Dysfunction</td>
<td>CENC</td>
<td>Not Awarded</td>
<td>VCOM</td>
</tr>
<tr>
<td>VCOM PI</td>
<td>FASTcell cytometry for rapid and cost-effective identification of cancer origin and drug sensitivity in LMICs</td>
<td>NIH R33</td>
<td>Not Awarded</td>
<td>SRI</td>
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<tr>
<td>VCOM PI</td>
<td>Development of a point-of-care diagnostic tool for human traumatic injury through multiscale chemosensory-based modeling</td>
<td>NIH</td>
<td>Not Awarded</td>
<td>Virginia Tech</td>
</tr>
<tr>
<td>Consultant</td>
<td>Non-surgical method for knee ligament repair and structural reinforcement</td>
<td>DOD</td>
<td>Not Awarded</td>
<td>Rutgers</td>
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<tr>
<td>PI</td>
<td>PRE APP: Biomarkers of cell cycle function for the identification of warfighters at risk for AD or CTE following TBI</td>
<td>DOD</td>
<td>Not Awarded</td>
<td>VCOM</td>
</tr>
<tr>
<td>PI</td>
<td>PRE APP: Assessment of Post mTBI Cell cycle dysfunction and associated neurodegeneration using lymphocyte proliferation (LymPro) test</td>
<td>DOD</td>
<td>Not Awarded</td>
<td>VCOM</td>
</tr>
<tr>
<td>Investigator</td>
<td>MRI: Acquisition of a Force-Measuring Treadmill for Biomedical Experimentation and Assistive Device Development</td>
<td>NSF MRI</td>
<td>Awarded</td>
<td>Virginia Tech</td>
</tr>
<tr>
<td>VCOM PI</td>
<td>Returning Athletes with Patellar Tendinopathy to Sport through a Novel Clinical Intervention</td>
<td>NBA</td>
<td>Not Awarded</td>
<td>Virginia Tech</td>
</tr>
<tr>
<td>VCOM PI</td>
<td>Ex-vivo pump to treat hyperkalemia resulting from acute kidney injury (AKI)</td>
<td>DOD SBIR Phase 1</td>
<td>Pending</td>
<td>NanoSonic</td>
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<tr>
<td>VCOM PI</td>
<td>Returning Athletes with Patellar Tendinopathy to Sport through a Novel Clinical Intervention</td>
<td>NIH R21</td>
<td>Pending</td>
<td>Virginia Tech</td>
</tr>
</tbody>
</table>
Be RELENTLESS!!!!

- “Hard work beats talent when talent doesn't work hard.”
  – Time Notke
- “Just keep going. Everybody gets better if they keep at it.”
  – Ted Williams

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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Total Submissions:</td>
<td>11</td>
</tr>
<tr>
<td>Pending:</td>
<td>2</td>
</tr>
<tr>
<td>Award Percentage</td>
<td>22%</td>
</tr>
<tr>
<td>(based on non pending)</td>
<td></td>
</tr>
<tr>
<td>Not Awarded (based on</td>
<td>78%</td>
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<tr>
<td>non pending)</td>
<td></td>
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</table>

Following in Still’s footsteps
Basis of osteopathic medicine is “of such exact, exhaustive, and verifiable knowledge of the structure and function of the human mechanism.” (Still, 1897)
“DO means Dig On.” (Still, personal papers)