Dean’s Excellence in Research Celebration

I. Welcome by Dean Page

II. State of Research at LCOM by Senior Associate Dean Jensen

III. Awards – nominees are listed in the handout
   • Trainees
   • Network Medical Group
   • Faculty

IV. Keynote address - Dr. Elaine Ostrander

V. Reception in Hoehl Gallery
State of Research at LCOM

GORDON L. JENSEN, M.D., PH.D.
SENIOR ASSOCIATE DEAN FOR RESEARCH
THE ROBERT LARNER, M.D. COLLEGE OF MEDICINE
THE UNIVERSITY OF VERMONT
Good things are happening!
Peer-reviewed Publications

Number of Publications by Year:
- 2013: 992
- 2014: 1048
- 2015: 926
- 2016: 1168
- 2017: 1220
Research Funding

I. Research grant funding to the Larner College of Medicine fluctuates between $70-90 million annually ($84 million for FY 2018).

II. Vermont is among the top ten states in per capita federal research funding.
**Major Grant Awards FY 2018**

<table>
<thead>
<tr>
<th></th>
<th>Name</th>
<th>Organization</th>
<th>Amount (in $ millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.</td>
<td>J Shaw</td>
<td>VT Dept Health</td>
<td>$4.5</td>
</tr>
<tr>
<td>II.</td>
<td>J Shaw</td>
<td>VT Dept Health</td>
<td>$4.0</td>
</tr>
<tr>
<td>III.</td>
<td>S Higgins</td>
<td>NIDA</td>
<td>$3.8</td>
</tr>
<tr>
<td>IV.</td>
<td>S Higgins</td>
<td>NIGMS</td>
<td>$2.2</td>
</tr>
<tr>
<td>V.</td>
<td>S Doublie</td>
<td>NCI</td>
<td>$1.8</td>
</tr>
<tr>
<td>VI.</td>
<td>G Stein</td>
<td>NIGMS</td>
<td>$1.7</td>
</tr>
<tr>
<td>VI.</td>
<td>T Sympatico</td>
<td>VA</td>
<td>$1.4</td>
</tr>
<tr>
<td>VII.</td>
<td>H Garavan</td>
<td>Oregon Health</td>
<td>$1.4</td>
</tr>
<tr>
<td>VIII.</td>
<td>N Heintz</td>
<td>Paredox Pharm</td>
<td>$1.4</td>
</tr>
<tr>
<td>IX.</td>
<td>B Bouchard</td>
<td>OK Med Res FDN</td>
<td>$1.2</td>
</tr>
<tr>
<td>X.</td>
<td>R Budd</td>
<td>NIGMS</td>
<td>$1.2</td>
</tr>
</tbody>
</table>

All awards in $ millions
## LCOM New Faculty Hires

<table>
<thead>
<tr>
<th>Faculty Hires</th>
<th>FY 18</th>
<th>FY 17</th>
<th>FY 16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pathway</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tenure</td>
<td>2</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Research</td>
<td>5</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Faculty Scientist</td>
<td>5</td>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Open Recruitments</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Pathway</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tenure</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Faculty Scientist</td>
<td>0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Center of Biomedical Research Excellence (COBRE) and Clinical Translational Research (CTR) Grants

I. Vermont Lung Center
II. Neuroscience Center of Biomedical Research Excellence
III. Vermont Center for Immunobiology and Infectious Diseases
IV. Vermont Center on Behavior and Health
V. Northern New England Clinical and Translational Research Network
VI. Brand new – Translational Global Infectious Disease Research (TGIR)
• Pilot grants
  • 9 projects approved by scientific advisory committee
    • 38 LOI’s year-1, 29 LOI’s year-2
    • 3 funded, 2 in progress, 1 approved NIGMS, 3 awaiting final approval

• Working groups
  • Substance use
  • Cancer

• Supplement opiate grant – PI – Valerie Harder, PhD, MHS, - $340K

• Educational programs and outreach
Translational Global Infectious Disease Research (TGIR)

I. PI - Beth Kirkpatrick, MD, $12 million

II. Co-PIs, Christopher Huston, MD and Jason Bates, PhD

III. Junior faculty team: Benjamin Lee, MD, Sean Diehl, PhD, Laurent Hebert-Dufresne, PhD and Matthew Kinsey, MD, MPH

IV. Cores
   • Administrative Core
   • Mathematical and Computational Predictive Modeling Core
   • Human and Population Research Core
Ongoing Strategic Programs and Investments

I. Health services
II. Research cores
III. Research support
IV. Salary support for PI’s for major institutional grant opportunities
V. Targeted pilot research funds
VI. Faculty incentive program
VII. New research building and Given building renovation
Health Services Research Center

- Adam Atherly, Ph.D., Director and Professor of Medicine
- Intellectual hub for health services research
- Commitment of $2.5 million by LCOM and $1.0 million by UVMMG Development Fund
- Focus on secondary data analysis
- Recruiting additional faculty – Eline van den Broek-Altenburg
- Building relationships – Medical Center, Health Network, Medical Group, OneCare, Green Mountain Care Board, and VT Department of Health
Where are we going with health informatics?

I. Create a clinical research data repository using the Epic electronic health record
   • Joint initiative of the LCOM, the Medical Center/Health Network, and the Health Network Medical Group
   • Initially for the Medical Center, later for the Network
   • Opt in/opt out model based upon default consent
   • De-identified with coded linkage
   • Skilled research analysts will address rapid preparatory to research queries and more complex data extracts
## Research Cores and Services

### LCOM Cores
- Microscopy Imaging
- Flow Cytometry
- VT Integrative Genomics
  - DNA Analysis
  - Microarray
  - Massively Parallel Sequencing
  - Bioinformatics
- MRI Center
- Biostatistics
- Office of Clinical Trials Research (OCTR)
- Clinical Research Center (CRC)

### Other Resources
- Genomic Medicine Laboratory
- BSL-3 Facility
- Investigational Pharmacy
- Medical Simulation Center
- VT Advanced Computing Center
- Instrumentation and Model Facility
- Mass Spectrometry
- Proteomics
- Biobank
- Animal Research
Research Cores - New Developments

I. New website http://med.uvm.edu/research/corefacilites

II. Comprehensive core assessments
   - Completed reviews of Bioinformatics, Biostatistics, Flow Cytometry/Cell Sorting and MRI Imaging cores
   - Reviewing duplication of resources/services
   - Evolution of cores – new proposals and sun downing – COBRE Neuroscience Imaging

III. Core subsidy issues
   - Space charges – Dean’s Office has assumed more than $200K
Research Cores – New Developments

I. Integrated business model – Integrative Genomics, Flow Cytometry/Cell Sorting, and Microscopy Imaging
   • Shared business manager
   • Staffing/cross-training
   • Scheduling/billing
   • Marketing/outreach
   • Co-location and sharing of space

II. Animal Surgical and Research Consultation Service
   • Steve Bell

III. Autopsy Service Research Collaboration
   • Rachel.Martindale@uvmhealth.org or extension 7-3570
Research Cores – New Developments

I. Bioinformatics and Biostatistics

II. Leadership- interim directors – Judy Dragon and Peter Callas

III. Investments by LCOM - $2.5 million
   • New recruitments targeting consultative needs
   • Defray consultation costs
   • Joint faculty recruitment ongoing with CEMS – complex systems

IV. Going forward
   • Recruit director for Biostatistics
   • Bring Biostatistics Core into LCOM
   • Develop sustainable model with service orientation and improved access
Clinical Research Support

I. Directed by Kim Luebbers, MSHS, RN, BSN, OCN, Asst. Dean for Clinical Research

- Office of Clinical Trials Research (OCTR)
  - Industry supported research
  - Assist with regulatory, contract, and budget support – FY18 managed 172 agreements
  - Research staff support – FY18 supported 188 projects
  - Total profit $445K half of which was returned to departments

- Clinical Research Center (CRC)
  - Research ward with beds and nursing staff
  - Supporting laboratory, interventions, and procedures
  - Currently 65 approved protocols
  - FY18 - 2,822 outpatient visits and 21 inpatient bed visits
  - Provided $558K in services with $430K subsidized by LCOM
Research Support

I. Navigators

- [http://www.med.uvm.edu/clinicalresearch/research-navigator](http://www.med.uvm.edu/clinicalresearch/research-navigator)
- First navigator hired – **Emily Tarleton, Ph.D.**
- Search for 2nd navigator started
- Resource clearing house
- Education and training
- Regulatory and oversight functions
- Online intake form - individualized pathway tailored to your needs within 2 business days
Research Support

I. Electronic IRB
   • Purchased Huron Click
     ◦ $3 million shared investment by LCOM, Health Network, and VP for Research
   • Implementation is ongoing
   • Roll out anticipated for November 26, 2018.

II. Clinical trials management system
   • Work in progress to identify funding
Salary support for PI’s for major institutional grant opportunities

I. LCOM has budgeted $100K annually to provide 20-40% effort of PI salary at the NIH cap for a maximum of 3 months to support development and submission of training or other major institutional grant opportunities.

II. Should support 3-9 faculty members annually depending upon the award amounts.

III. In 2018 support has been awarded to Mary Cushman, Mark Nelson, Matt Poynter, Charlie Irvin

IV. Announcement with instructions has been disseminated.
   • Maximum 3 page outline application including requested details.
   • Supporting letter from department head.
   • Biosketch in NIH format.

V. Ad hoc committee review
Targeted Pilot Research Funds

I. LCOM has budgeted $100K annually for targeted pilot research funds for faculty. These will be over and above funds expended in our existing pilot and bridge programs.

II. Innovative current round targets new methodologies in basic research in conjunction with a research core.
   • Phase 1 – Learn new methodology - Funded 5 teams - $20K
   • Phase 2 – Compete for $80K to implement new methodology
Modern Research Facilities are Needed

I. Antiquated facilities

Leaking lab in Given Building

Dewey Building
The Solution

1. Build new modern research facility
2. Renovate and upgrade Given
3. Vacate and repurpose Dewey

4. This solution will:
   a) Eliminate $41 million Deferred Maintenance on Dewey & Given
   b) Increase the facilities reimbursement in our federal research grants
   c) Reduce Given’s cooling and heating loads by 50%
The Funding

I. The current budget is approximately $90 million for both the new building and the rehabilitated Given building.

II. Funding Sources include:

- New Research Building $45M funding from the Larner College of Medicine
  - $15M College Reserves
  - $15M UVM Health Network Medical Group, Faculty Practice Division (loan)
  - $15M Philanthropy

- Given Renovation $45M funding from The University
Information and Feedback

I. **Website** -
   [http://www.med.uvm.edu/BiomedicalResearchComplex](http://www.med.uvm.edu/BiomedicalResearchComplex)


III. Town hall meetings

IV. Listening sessions

V. Unit presentations
Strategic Research Planning Updates: Faculty Committee Basic Science Report

- **Funding to basic science departments hire/support faculty ✓**
  - Committed funds to support 6 new tenure line faculty positions
- **Research cores ✓**
- **Support grad students/post-doc’s ✓**
  - Working to increase stipends
- **Pilot funding support ✓**
- **Faculty incentive plan ✓**
- **Support to centers?**
  - Review funding annually
  - Need to formalize process
- **Cross-departmental infrastructure & resources ✓**
  - Work in progress – facilities and cores
- **Development of research teams ✓**
  - Priority in context of new facilities
  - Priority in education and training
- **Fund raising activities for basic research ✓**
- **Outcome assessments ongoing ✓**
- **Salary support for service activities?**
Strategic Research Planning: Updates
Chair Committee Basic Science Report

I. Create a Chairs Research Council ✓
   • Strategic planning, guide use of available resources, coordinate faculty recruitments, sharing best practices, and communication

II. Develop expectations for research performance metrics and accountability ✓
    • Sub-committee chaired by Mark Nelson and Greg Holmes

III. Explore development of centralized research administrative support functions that are currently at department level
    • Future topic of discussion
Research Incentive Program

I. LCOM budgeted $1 million per year over 5 years.

II. Amount of incentive was based on a percentage of total F&A brought in by each qualified faculty member. Can be used as unrestricted fund or additional pay.

III. Fall 2017 awards have gone out to 66 Ph.D.’s and 11 M.D.’s; 65% overall received as discretionary account and 35% as bonus payment. 2018 awards are pending.

IV. Monitoring outcomes with faculty working group.

V. We plan to continue status quo.
Chairs Research Council Subcommittee: Research Performance Recommendations

I. All faculty in the 4 tracks are expected to earn their salary whether it be through extramural research, teaching or in the case of MD/PhD or MDs clinical care.

II. Recommendations are intended to aid LCOM chairs in the communication of clear and consistent expectations of research performance to faculty members.

III. Flexibility in implementation and management of these recommendations at the individual faculty member level is retained by the chair.

IV. The detailed metrics have been disseminated at the department level with guidance to share with all faculty members.
Strategic Research Priorities

I. Support research and research training
   • Basic, translational, and clinical
   • Input from faculty, staff, and trainees
   • Invest our resources in targeted strategic manner

II. Build regional consortia focused on research, education and training
   • Rural health theme across northern New England
   • Capitalize on shared resources – alignment with Medical Center & Health Network
   • Collaboration with the Boston University CTSI including K-mentoring program, K to R program, and educational programs
   • NNE-CTR model
State of Research at LCOM

I. Please reach out with any questions or feedback.

II. Gordon.jensen@med.uvm.edu
Dean’s Excellence in Research Awards
Graduate Student / Postdoc Research Showcase

I. Held earlier Congratulations to all participants and award recipients!

Post-Doc Division
First Place: Kirsten Tracy
Runner-up: Friederike Uhlig

Senior Graduate Division
First Place: Christopher Dustin
Runner-up: Leslie Sepaniac

Junior Graduate Division
First Place: Alex Thompson
Runner-up: Alisa Cario
2018 UVM Medical Alumni Association
Distinguished Graduate Alumni Award

I. Presented yesterday to Nicholas H. Heintz, MS ‘77, PhD ‘79

II. UVM Professor Emeritus, Pathology and Laboratory Medicine

III. Presentation entitled “Serendipity & Science: Chance Encounters that Shaped a Career”
Norman R. Alpert Award

- Norman Alpert was Professor and Chair of the Department of Molecular Physiology and Biophysics (1966-95).
- The Norman R. Alpert Research Prize honors his commitment to training emerging talent in the biosciences, and is awarded annually for the best peer-reviewed research article by a CMB student.
- The 2018 awardee, Benjamin King, a trainee of Jason Botten, Ph.D. and a current postdoctoral trainee at New York School of Medicine.
I. **Graduate Student – Outstanding Research Publication**

II. **Jamie Abbott** – mentor Christopher Francklyn, Ph.D.


Dean’s Excellence in Research Awards

I. Medical Student – Outstanding Research Publication

II. Lindsay Howe – mentor Ira Bernstein, M.D.

Dean’s Excellence in Research Awards

I. Postdoctoral Fellow – Outstanding Research Publication

II. Osama Harraz, Ph.D. – mentor Mark Nelson, Ph.D.

I. **Resident – Outstanding Research Publication**

II. **Borzoo Farhang, D.O.** – mentor Lydia Grondin, M.D.

I. UVM Health Network Medical Group Awards

• Presented by Claude Deschamps, M.D., President and Chief Executive Officer, UVM Health Network Medical Group and LCOM Senior Associate Dean for Clinical Affairs
I. Research Grant

- PI - Emmett Whitaker, M.D., Assistant Professor (Anesthesiology)
- Co-PI - Gregory Holmes, M.D., Professor (Neurology)
  - “Effects of major surgical stress on neurodevelopment in neonatal piglets”
UVM Health Network Medical Group

I. Innovation Grants

- PI - Nina Narasimhadevara, M.D., Assistant Professor
- Co-PI - Richard Solomon, M.D., Professor
- Co-PI - Macaulay Onuigbo, M.D., Associate Professor
- (Medicine-Division of Nephrology)
  - “A pilot crossover study of the impact of increased urine flow rate by oral hydration versus bolus intravenous furosemide infusion on urinary oxygen tension”

- Co-PI - Daniel Wolfson, M.D., Associate Professor (Surgery-Emergency Medicine)
- Co-PI - Scott Makey, Ph.D., Assistant Professor (Psychiatry)
- Co-PI - Sanchit Maruti, M.D., Assistant Professor (Psychiatry)
  - “Emergency Department-initiated buprenorphine intervention for opioid use disorder”
I. Faculty Practice - Junior Researcher of the Year: Chris Anker, MD
   • Associate Professor of Radiation Oncology

II. Highlights
   • Invited to help write national treatment guidelines for malignant melanoma
   • Published single-author expert opinion in the most prestigious radiation oncology journal and has numerous peer-reviewed publications
   • Served as PI or co-PI on five research grants since 2014
   • Chairs UVM Cancer Center’s Protocol Review and Monitoring Committee
   • Recognized as an outstanding reviewer for radiation oncology’s most respected journals
I. Faculty Practice - Senior Researcher of the Year: Chris Huston, MD
   • Professor of Medicine, Division of Infectious Disease

II. Highlights
   • Nationally and internationally recognized for his expertise in parasites and the diseases they cause, therapeutics and drug repurposing.
   • Has had continuous extramural research funding – including from the NIH and the Bill and Melinda Gates Foundation – since Year 2 of his ID fellowship.
   • Publication record includes 42 peer-reviewed publications, 5 review articles and 20 book chapters with an H-Index of 25 and RCR of 2.33 – very high for his field.
   • He is one of the department’s strongest clinician educators and has a reputation as a strong and caring mentor.
Dean’s Excellence in Research Awards

I. Dean’s Research Mentorship Award

II. Renee Stapleton, MD, PhD – nominated by Charles Irvin
   • Assoc. Professor of Medicine, Pulmonary Medicine, Dept. of Medicine

III. Highlights
   • Research in ICU clinical trials, nutrition, and communication with patients
   • LCOM Director of Medical Student Research, Chair Dept. of Medicine Resident Research Committee, Chair Division of Pulmonary and Critical Care Medicine Fellows Research Committee
   • PI of two current NIH R01 grants for multicenter randomized controlled trials
   • Mentored multiple trainees
I. Dean’s Rising Star New Investigator Award (Assistant Professor)

II. Thomas Ahern, PhD, MPH - nominated by Jon Boyson
   • Assistant professor, Division Surgical Research & Dept. Biochemistry

III. Highlights
   • Pharmaco-epidemiology and cancer
   • Danish studies of statins, digoxin, and vitamin K antagonists and breast cancer
   • Biomarkers of breast cancer response to adjuvant therapy
   • Funding support from NIH, Susan Komen and other foundations
   • 44 peer-reviewed research papers
Dean’s Excellence in Research Awards

I. Dean’s Mid-Career Investigator Award (Assoc. Professor)

II. Brian Sprague, PhD - nominated by Jon Boyson
   • Associate Professor, Green & Gold Professorship, Division of Surgical Research

III. Highlights
   • Cancer epidemiologist with focus on breast cancer
   • Notable works have informed national policy on breast cancer screening,
   • Continuously funded by NIH since his arrival at UVM in 2010
   • More than 110 peer-reviewed publications
     ◦ >40 as first or senior author
Dean’s Excellence in Research Awards

I. Dean’s Research Laureate Award (Professor)

II. Jason Bates, PhD, DSc - nominated by Charles Irvin
   • Professor of Medicine and Biomedical Engineering, Dept. of Medicine

III. Highlights
   • Bioengineering, lung mechanics and computer modeling of disease processes
   • Continuous extramural funding for greater than 30 years
   • 275 publications in the literature, 22 book chapters and a book as sole author
   • Mentored 32 post-doctoral fellows, 21 graduate students, and 23 undergraduates
   • UVM University Scholar and a Fellow of the Biomedical Engineering Society
Keynote Speaker – Elaine Ostrander, PhD
“Canines, Cancer, and Comparative Genomics”

I. Chief and Distinguished Investigator
II. Cancer Genetics and Comparative Genomics Branch
III. National Human Genome Research Institute
IV. National Institutes of Health