

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**



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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

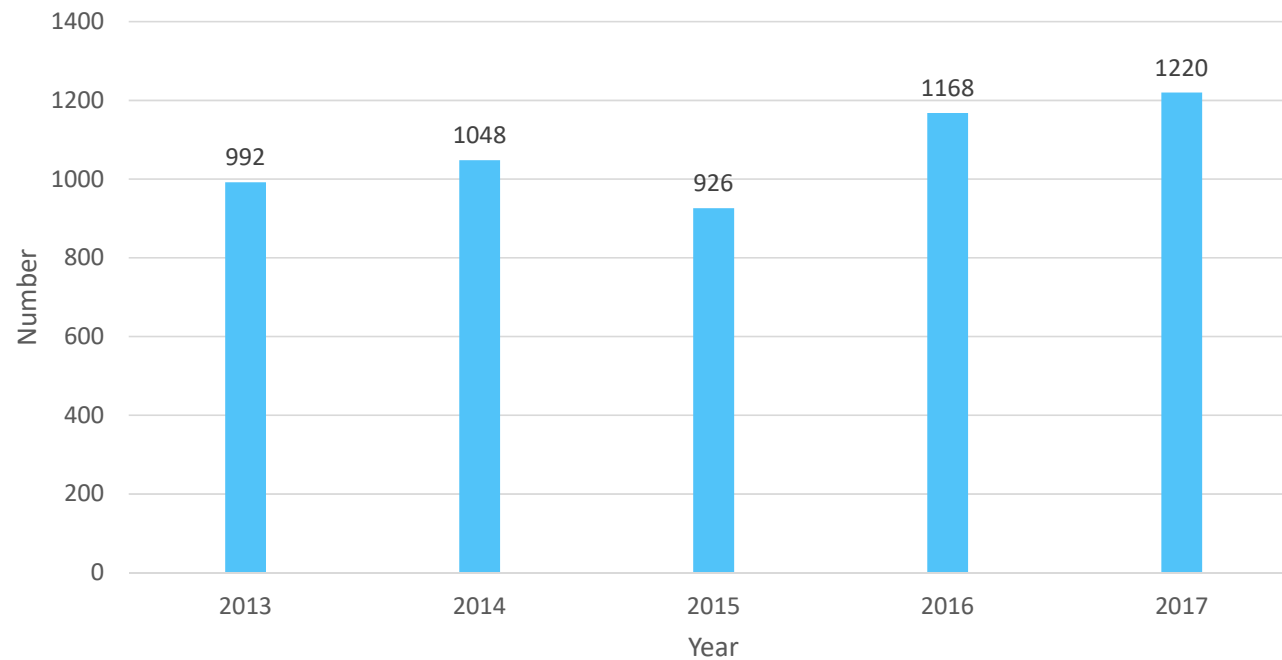


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Good things are happening!



Peer-reviewed Publications



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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.



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Major Grant Awards FY 2018

- | | |
|--|--|
| I. J Shaw – VT Dept Health - \$4.5 | VI. T Sympatico – VA - \$1.4 |
| II. J Shaw – VT Dept Health - \$4.0 | VII. H Garavan – Oregon Health - \$1.4 |
| III. S Higgins – NIDA - \$3.8 | VIII. N Heintz – Paredox Pharm - \$1.4 |
| IV. S Higgins – NIGMS - \$2.2 | IX. B Bouchard – OK Med Res FDN - \$1.2 |
| V. S Doublie – NCI – \$1.8 | X. R Budd – NIGMS - \$1.2 |
| VI. G Stein – NIGMS - \$1.7 | |

All awards in \$ millions



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LCOM New Faculty Hires

Faculty Hires			
Pathway	FY 18	FY 17	FY 16
Tenure	2	1	6
Research	5	3	3
Faculty Scientist	5	1	3
Open Recruitments			
Pathway	Current		
Tenure	5		
Research	2		
Faculty Scientist	0		



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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)



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NORTHERN NEW ENGLAND **CLINICAL & TRANSLATIONAL** RESEARCH NETWORK

- 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



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SOUTHERN MAINE


Maine Medical Center



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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



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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**



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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



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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



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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



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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



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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



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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



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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



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Research Support

I. Navigators

- <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



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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



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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**



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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



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Modern Research Facilities are Needed

I. Antiquated facilities



Leaking lab in Given Building



Dewey Building



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Slide 23

JGL1 Jensen, Gordon L, 9/24/2018

JGL2 Jensen, Gordon L, 9/24/2018

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%



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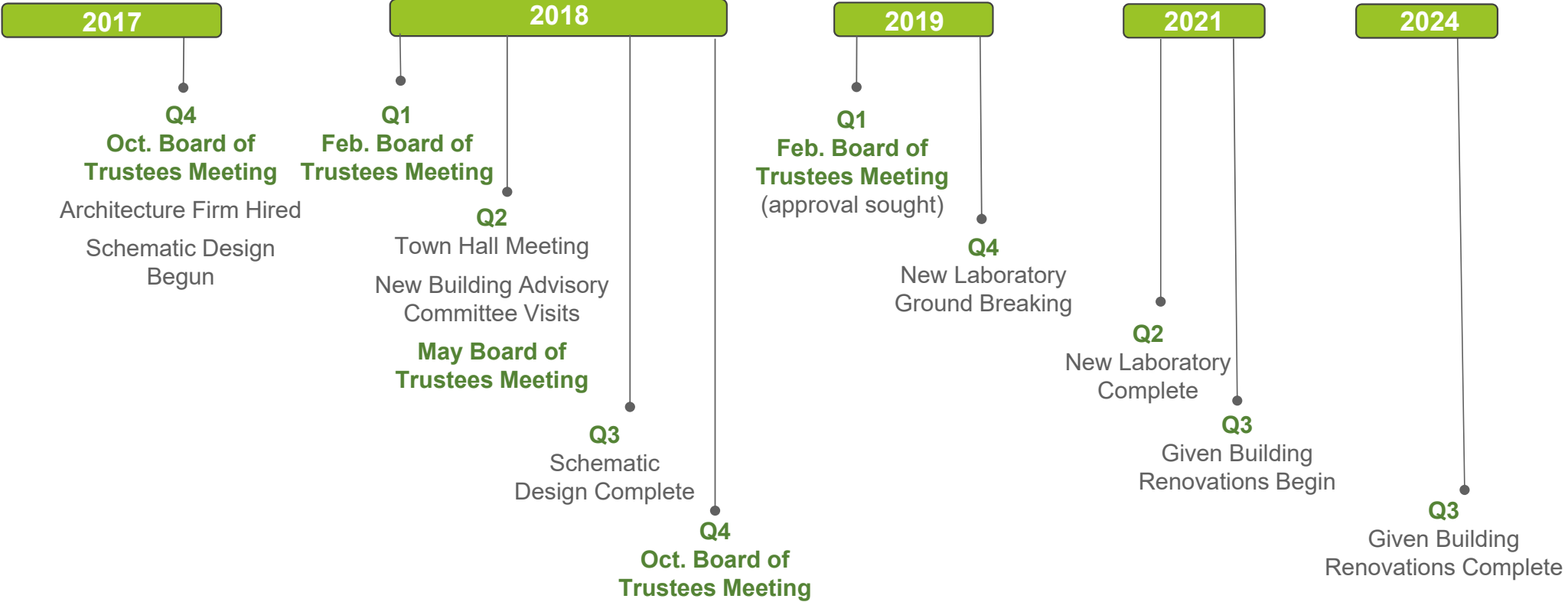
The Funding

- 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



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Schedule Overview



Information and Feedback

- I. Website -
<http://www.med.uvm.edu/BiomedicalResearchComplex>
- II. Advisory group – M Cipolla, Y Jansen-Heininger, J Botten, M Wargo, J Stumpff, M Ross. J Stein, C Huston
- III. Town hall meetings
- IV. Listening sessions
- V. Unit presentations



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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** ?



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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



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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.**



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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.



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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



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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



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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



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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”



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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.
- **King BR**, Samacoits A, Eisenhauer PL, Ziegler CM, Bruce EA, Zenklusen D, Zimmer C, Mueller F, Botten J. Visualization of Arenavirus RNA Species in Individual Cells by Single-Molecule Fluorescence *In Situ* Hybridization Suggests a Model of Cyclical Infection and Clearance during Persistence. J Virol. 2018 May 29;92(12). pii: e02241-17. doi: 10.1128/JVI.02241-17



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Dean's Excellence in Research Awards

I. Graduate Student – Outstanding Research Publication

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

III. **Abbott JA**, Meyer-Schuman R, Lupo V, Feely S, Mademan I, Opreescu SN, Gri n LB, Alberti MA, Casasnovas C, Aharoni S, Basel-Vanagaite L, Züchner S, De Jonghe P, Baets J, Shy ME, Espinós C, Demeler B, Antonellis A, Francklyn C. Substrate interaction defects in histidyl-tRNA synthetase linked to dominant axonal peripheral neuropathy. Human Mutation. 2018 Mar;39(3):415-432. doi: 10.1002/humu.23380. Epub 2017 Dec 26



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Dean's Excellence in Research Awards

I. Medical Student – Outstanding Research Publication

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

III. **Howe L**, Hammer E, Badger G, Bernstein IM. Effect of Pregnancy Interval on Second Pregnancy Blood Pressure Following Prior Preeclampsia. Reprod Sci. 2018 May;25(5):727-732.



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Dean's Excellence in Research Awards

- I. Postdoctoral Fellow – Outstanding Research Publication
- II. **Osama Harraz, Ph.D.** – mentor Mark Nelson, Ph.D.
- III. **Harraz OF**, Longden TA, Dabertrand F, Hill-Eubanks D, Nelson MT. Endothelial GqPCR activity controls capillary electrical signaling and brain blood flow through PIP_2 depletion. Proceedings of the National Academy of Sciences Mar 2018, 201800201; DOI: 10.1073/pnas.1800201115



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Dean's Excellence in Research Awards

- I. Resident – Outstanding Research Publication
- II. **Borzoo Farhang, D.O.** – mentor Lydia Grondin, M.D.
- III. **Farhang B, Grondin L.** The effect of zinc lozenge on postoperative sore throat: A prospective randomized, double-blinded, placebo-controlled study. *Anesthesia and Analgesia*. 2018. 126(1):78-83. doi: 10.1213/ANE.0000000000002494. PMID 28953493



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UVM Health Network Medical Group

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



UVM Health Network Medical Group

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”



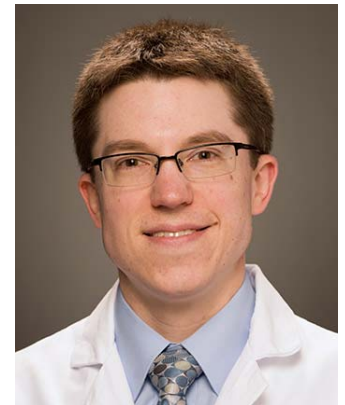
UVM Health Network Medical Group

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



UVM Health Network Medical Group

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



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Dean's Excellence in Research Awards



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



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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



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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



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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**



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