

# He said “Flip” We said “How high?”

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## Objectives

- Define technology ecosystem to support new models of teaching, including flipped classroom, TBL, PBL and others
- Interpret how new models of teaching and learning impact the LCME standard for curriculum monitoring and continuous quality improvement
- Discuss staffing and delivery models for next-generation teaching and learning support



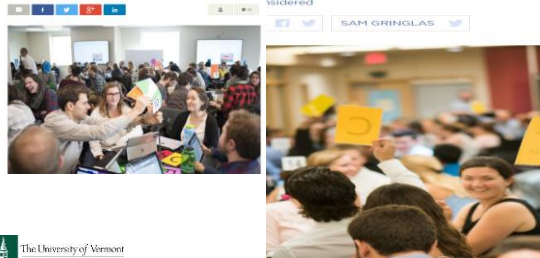
## A little history

- University of Vermont College of Medicine
  - Established 1822, 7<sup>th</sup> oldest medical school in US
  - 120 students per class
  - Vermont Integrated Curriculum implemented in 2003
  - 1 branch campus; LIC program; clinical sites in VT, NY, FL, CT and ME

## And then the world changed



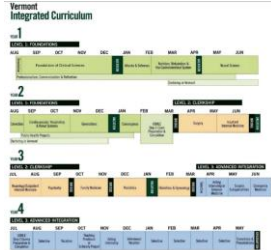
## Who needs lectures? Vermont medical school chooses other ways to teach



2016

Course	Lecture	Lab	Small Groups*	Practical Courses	Other†	Total
Foundations of Clinical Science	252	133	56	58	168	667
Medicine and Pathology	147	2	20	1	95	265
Nursing, Midwifery and the Doctoral Nurse Practitioner	79	18	28	9	138	262
Health Science	114	23	20	6	79	242
Pharmacology, Communications and Behavioral	3	0	41		9	53
Biological System	3	0	2	53	58	78
Genetics	38	4	30	6	35	103
Cardiovascular, Respiratory, and Renal Systems	87	15	44	13	61	219
Geriatrics	82	18	20	9	78	217
Immunology	2	0	62	1	129	194
Public Health Programs	4	0	13	0	1	18
Total	612	211	337	93	608	2061

\* Includes time spent in preceptor ambulatory care  
 † Includes - Simulated learning, mock-interv, COMET facilities, Learning Modules



The players

- Senior Associate Dean for Education, William Jeffries, PhD
- Medical Curriculum Committee – curriculum oversight
  - Foundations, Clerkship and Advanced Integration – curriculum implementation
- Office of Medical Student Education – operations
- Active Learning Task Force – “Larner methods,” SOPs, policy
- Active Learning Team – pedagogical change and instructional design
- Teaching Academy – evaluation, assessment and scholarship



Technology services

- Administration – CIO, security officer, business administrator
- Infrastructure (5) – systems, storage, backup, Office365, desktop
- Applications (2.5) – programming and application integration
- Database (1.5) – reports and business intelligence
- Ed Tech (4) – faculty support, education application development
- AV (2) – room design and support
- Technicians (7) – hardware and helpdesk
- Supporting
  - 2500 desktops; 500 TB data; 800 full-time faculty; all services except networking
  - ~\$3.5 million total budget



The plan?

- “Lecture Free” by 2019
- Approved “Larner Methods”
- Standard Operating Procedures – Faculty, Students and Operations
- Scholarship through Teaching Academy
- “Learning Commons”
- Next LCME visit in 2021



What’s the tech plan?

- Evolutionary, not revolutionary
  - Data and Analytics
  - Ed Tech infrastructure
  - Ed Tech application support
  - Student computing environment
  - AV/Rooms
- Laying track in front of the train
  - Right now
  - Near term
  - By 2020



We’ve done this before

- LCME accreditation 2004 named the COMET team a strength of the institution
- LCME accreditation 2013 named the Technology Services unit a strength of the institution, “The responsiveness of the Technology Services unit to the needs of college of medicine faculty, students, and administrators enhances the implementation and evaluation of the medical education program.”



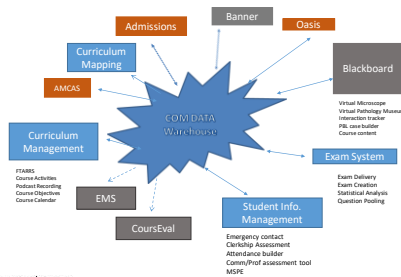
## Ed Tech infrastructure

- LMS – Blackboard
- Exam System – homegrown
- Curriculum Management system – homegrown
- Assessment tools – TBL, Peer Assessment, Preceptor Assessment
- Competency tracker – homegrown
- Scheduling – Oasis
- MSPE – homegrown
- Admissions – ZAP



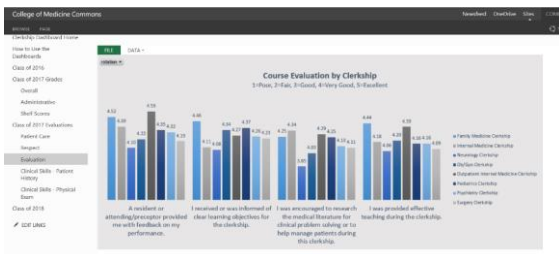
## Our philosophy

- Beg, borrow, buy, build
  - Extensive homegrown systems that support unique business needs
  - 2 programmers
  - 1 Data wizard
- But always, always own the data
  - Education data warehouse since the inception
  - Never move data from system to system
  - Role-based access and security



## Data and Analytics

- Data warehouse
- Moving from reporting to dashboarding
- Extensive use of data for comparability
- Current project financial modeling for active learning incentives
- Expanding our curriculum mapping



## Competency Tracker Admin

**View Rotation Summaries**

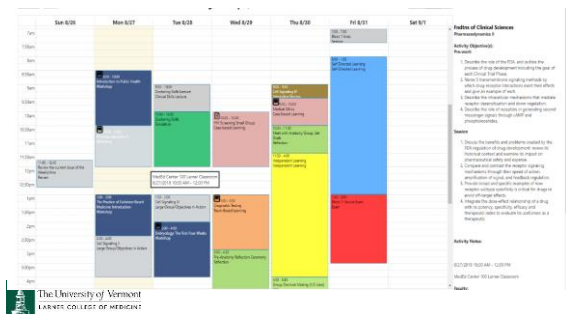
Select Class Year:

Select Course:

Select Section:

Summaries:





**Review Exam Learning Objectives**

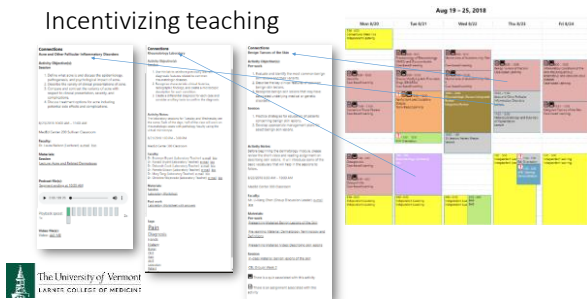
Activity: Review Exam Learning Objectives

Activity Description: Review Exam Learning Objectives

Activity Objectives: Review Exam Learning Objectives

Activity Details: Review Exam Learning Objectives

Incentivizing teaching



That allows us to

Row Label	SessionLength (hrs)	FFARS Contact (hrs)	PrepTime (hrs)	\$ Value
MD 508 Pediatrics in Yr 1, Year 1	3,511.25	39.25	78.50	
MD 509 Pathology of Clinical Sciences	1,399.67	1,254.33	2,564.17	
MD 505 Curriculum	37.25	37.25	86.50	
MD 505 Abstracts and Conferences	298.25	285.75	613.50	
MD 506 Nutrition, Metabolism & GI	360.75	296.58	703.67	
MD 511 General Pediatrics	686.25	615.25	1,346.50	
MD 508 Curriculum	205.13	196.50	417.00	
MD 505 Cardiac, Respiratory & Renal	531.83	504.83	1,069.67	
MD 505 Curriculum	277.82	272.82	650.13	
MD 511 Curriculum	392.00	392.00	784.00	
MD 505 Public Health Projects, Tr 2	54.50	54.50	113.00	
MD 505 Curriculum, W. Reflection	785.50	785.50	1,571.00	
<b>Grand Total</b>	<b>8,517.50</b>	<b>4,736.67</b>	<b>9,937.83</b>	

Which becomes

Row Label	SessionLength	FFARS Contact	PrepTime	\$ Value
Activity Objectives	65.25	65.25	160.50	
Activity Objectives	167.67	159.67	341.83	
Activity Objectives & Writing Objectives	44.00	44.00	88.00	
Activity Objectives of the Day	249.68	249.68	499.37	
Activity Objectives	3.58	3.58	7.16	
Activity Objectives	2.50	2.50	5.00	
Activity Objectives of the Day	216.00	193.00	386.17	
Activity Objectives of the Day	3.00	3.00	6.00	
Activity Objectives	1,282.25	1,193.25	2,463.50	
Activity Objectives	2,481.42	1,233.75	2,566.50	
Activity Objectives	614.67	614.67	1,229.33	
Activity Objectives	30.00	30.00	60.00	
Activity Objectives	65.75	65.00	131.50	
Activity Objectives	64.82	71.00	141.60	
Activity Objectives	1,219.82	589.82	1,219.63	
Activity Objectives	80.00	18.00	36.00	
Activity Objectives	424.17	424.17	848.33	
Activity Objectives	10.00	10.00	20.00	
Activity Objectives	72.75	72.75	145.50	
Activity Objectives	32.50	32.50	65.00	
Activity Objectives	205.67	183.67	377.33	
Activity Objectives	12.00	12.00	24.00	
Activity Objectives	12.00	12.00	24.00	
Activity Objectives	88.67	88.67	177.33	

In detail

ActivityName	SessionLength (hrs)	FFARS Contact (hrs)	PrepTime (hrs)	\$ Value
Large Group/Lecture	64.00	64.00	128.00	\$8,236.57
Large Group/Review	0.00	0.00	0.00	\$0.00
Large Group/TBL	1.67	1.67	3.33	\$6,619.71
Large Group/Workshop	3.00	3.00	6.00	\$9,666.86
Small-Group/Case-Based Instruction	8.00	8.00	16.00	\$12,889.15
(Blank)	1.50	0.00	0.00	\$0.00
<b>Grand Total</b>	<b>80.17</b>	<b>80.17</b>	<b>160.33</b>	<b>\$37,412.29</b>

And then will be



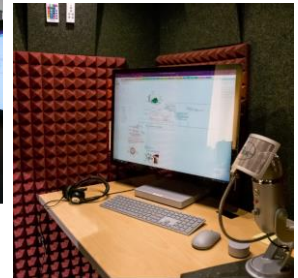
But what about the teaching and learning?

- Ed tech group – platforms, systems, tools and support
- Technology services – student computers, tablets and applications
- AV – room design and support



### Ed Tech Support

- 3 FTEs
  - 2 educational technologists; 1 multimedia developer
  - 1 team lead
- Applications – SoftChalk, Camtasia, Turning Technologies, Osmosis
- Training – just in time support & workshops



### Student support

- Helpdesk in the Larner Learning Commons
  - Walk-up support 7:30 a.m. to 5 p.m.
- Microsoft Surface Pro 4 with four year complete care warranty
- Android table for clerkships
- OneNote training and support
- Office 365 for collaboration
- Carbonite backup



### Student computing environment

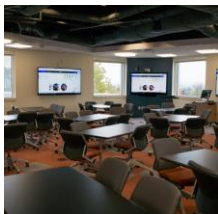
- Tech training – 3 hours in orientation; 1.5 in clerkship orientation
  - Help desk
  - Special topics
- OneNote – partner with students on training adoption near 95%
- Technology Professionalism curriculum



### AV/Rooms



- All renovations
- Sound is most important
- Worry about the “feel” of the room
- Training & help button



Larner – 125 p	Reardon – 125 p	Sullivan – 125 p	Carpenter – 280 p
<ul style="list-style-type: none"> <li>• Distributed seating</li> <li>• 9 monitors</li> <li>• Sound reinforcement</li> <li>• 2 Lavalier</li> <li>• 2 handheld mics</li> <li>• 20 ceiling mics</li> </ul>	<ul style="list-style-type: none"> <li>• Distributed seating</li> <li>• 7 monitors</li> <li>• Sound reinforcement</li> <li>• 2 Lavalier</li> <li>• 2 handheld mics</li> <li>• VC capable – 1 instructor, 1 audience camera</li> </ul>	<ul style="list-style-type: none"> <li>• Stadium seating</li> <li>• 3 Projection screens</li> <li>• Sound reinforcement</li> <li>• 2 Lavalier</li> <li>• 2 handheld mics</li> <li>• 3 panel mics</li> <li>• VC capable – 1 instructor, 2 audience cameras</li> </ul>	<ul style="list-style-type: none"> <li>• Stadium seating</li> <li>• 1 Projection Screen</li> <li>• Sound reinforcement</li> <li>• 2 Lavalier</li> <li>• 2 handheld mics</li> <li>• VC capable – 1 instructor camera</li> </ul>



### Vendor integration

- Don't duplicate administrative tasks – LMS, SIS, scheduling
  - Program niche applications or connecting pieces that add value
- Know what problem you're solving
  - Go into vendor discussions with a clear purpose
  - Watch for vaporware or mission creep
- Test, test, test
  - You know how your students and faculty work – test in real world situations
- Own the data.
  - Walk away if you can't get all the data you want.



### Questions?

