

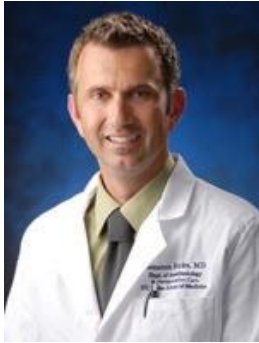
UCI School of Medicine
Medical Education Simulation Center

Annual Report

2018-2019



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Director Summary

Academic year 2018-2019 marks the center's eighth year of service to the medical students, residents and clinicians of UC Irvine School of Medicine and UC Irvine Health. The center's core mission is to develop, deliver, and evaluate pre-clinical, graduate, and interprofessional medical simulation education and training activities. In September 2018, we welcomed Dr. Mohammad Al-Khofi, from Saudi Arabia, as a simulation education fellow. Dr. Al-Khofi spent the year writing scenarios, teaching medical simulation, and gained some exposure in simulation operations. At the same time, Dr. Reid Honda (Emergency Medicine) finished up his yearlong Emergency Medicine Simulation Fellowship and will be taking a position in Hawaii.

Overall **simulation center average utilization was 50%**. The utilization was down by 5% percent this year mainly due to a higher than normal cancellation rates of resident and School of Nursing courses. Additionally, two MOCA courses were cancelled for low interest.

Overall **simulation center average staff utilization was 88%**. The utilization was down by 6% this year due to the same reasons listed above.

The academic year brought over 7,200 learners to the simulation center during 720 different sessions. As we continued to provide medical simulation activities for undergraduate medical students, we were excited to see that the **School of Nursing their total simulation education hours nearly doubled**. We also saw an increase in utilization from both the Anesthesia and Emergency Medicine departments; and we added Neurology skills training for residents. Dr. Wray took over as Director of Clinical Skills Assessment and head of Clinical Foundations. This prompted some reorganization in simulation sessions and curriculum.

Finally, our work with the UC Simulation Consortium netted a funded quality improvement project, centered on sepsis, across five different UC campuses. While we won't be actively involved in the project here at UC Irvine because it requires simulation at UCIMC, we are maintaining visibility on the project with Internal Medicine, and continue to represent UC Irvine at the consortium.

A handwritten signature in black ink, appearing to read 'C. Ricks'.

Cameron Ricks, MD

Highlights

Advancement in the Field of Medical Simulation Education

Cameron Ricks; Jereme Brammeier; Keith Beaulieu; Ryan Field, Esther Banh; Danica Rogacion; Corey Nelson; Joe Rinehart MD. **Ventriculostomy Management Training: Computer Based Training vs Simulation Training.** Presented at American Society of Anesthesiology (ASA) 2019.

Cameron Ricks, Michael Ma, Keith Beaulieu, Danica Rogacion, Razan Duella, Joseph Rinehart. **Asynchronous Learning/Simulation Assessment and Procedural Confidence.** Presented at Presented at American Society of Anesthesiology (ASA). October 2018.

<http://asaabstracts.com/strands/asaabstracts/abstract.htm?year=2018&index=15&absnum=5032>



Dr. Ricks was featured in Medical Training Magazine as a Patient Safety Advocate for his work in medical simulation.



Keith Beaulieu was presented with the SSH Presidential Award for work he did on behalf of the Accreditation Council

Representative in International Simulation Organizations

Society for Simulation in Healthcare

- Keith Beaulieu is a voting member of the Accreditation Council
 - Keith Beaulieu is an Accreditation Site Reviewer
 - Designated a team lead
 - Represented UC Irvine on one (1) full accreditation site review
 - Represented UC Irvine on two (2) provisional accreditation site reviews
 - Chair Accreditation Council Newsletter Task Force
-



Dr. Ricks welcoming brand new medical students during their 1st week orientation



John Vicente doing simulation orientation for the nursing students



Ryan Gouras monitoring the simulation activities during School of Nursing simulations



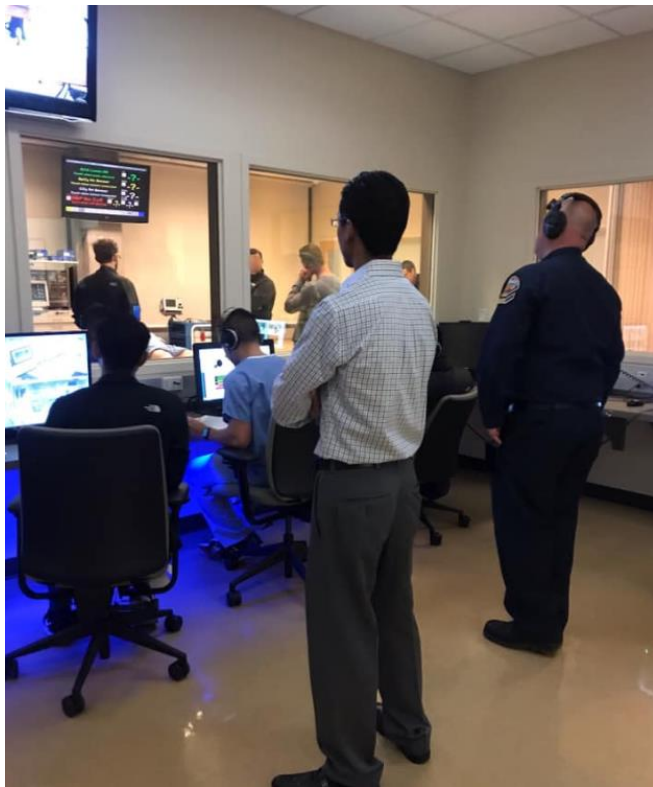
A medical student teaching ventilations to a high school student during a summer camp visit



Nursing Summer Camp



Dr. Ricks presenting on UC Irvine simulation operations at a UC Simulation Consortium Meeting in San Diego, CA.



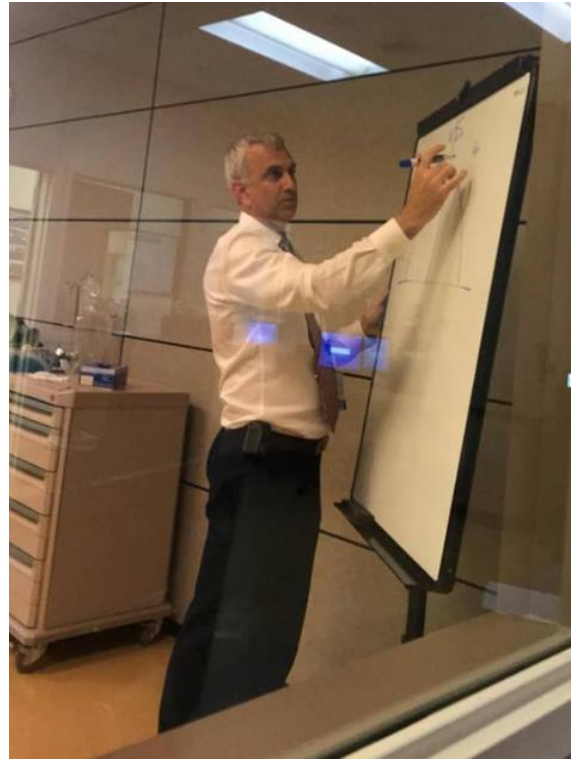
Dr. McCoy and a member of the Orange County Fire Authority look on at an Emergency Medicine resident simulation.



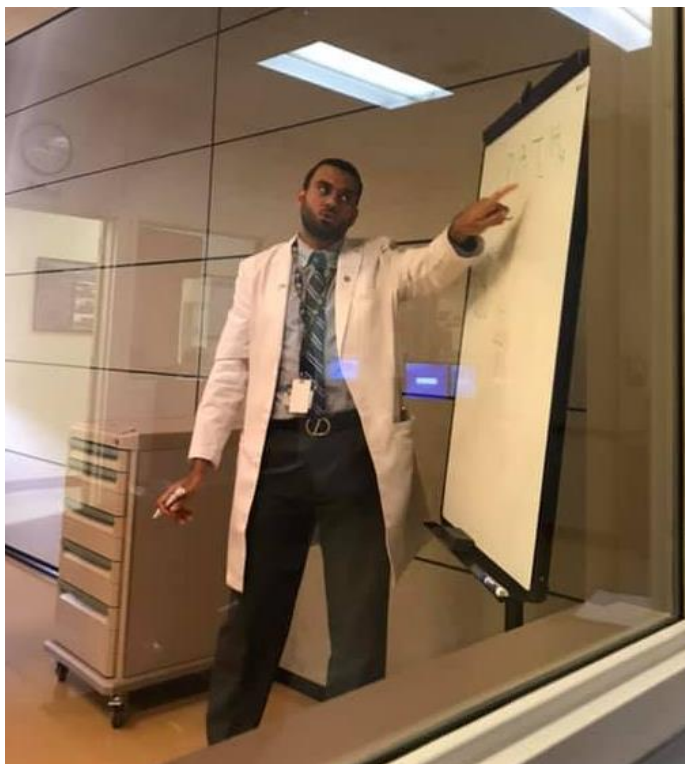
Dr. Al-Khofi and Dr. Ricks representing UC Irvine School of Medicine at the International Meeting for Simulation in Healthcare (IMSH) conference in San Antonio, TX.



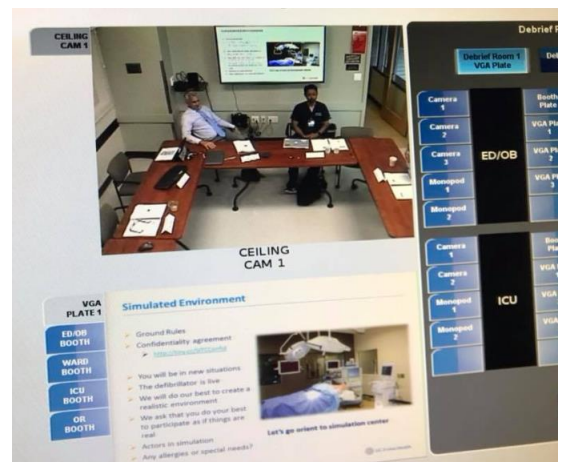
Ryan Gouras and Dr. Al-Khofi monitoring a medical simulation.



Dr. Ricks facilitating a medical student simulation session.



Dr. Al-Khofi facilitating a medical student simulation session.



Dr. Ricks and Dr. Honda facilitating during the Simulation Instructor Training Course (SITC)

Staff & Operational Model

Center Operations

The Medical Education Simulation Center has 4.0 FTE assigned for staffing and operations.

An additional 0.4 FTE is assigned to Dr. Ricks to provide program oversight and instruction to the medical students.

Simulation Fellows

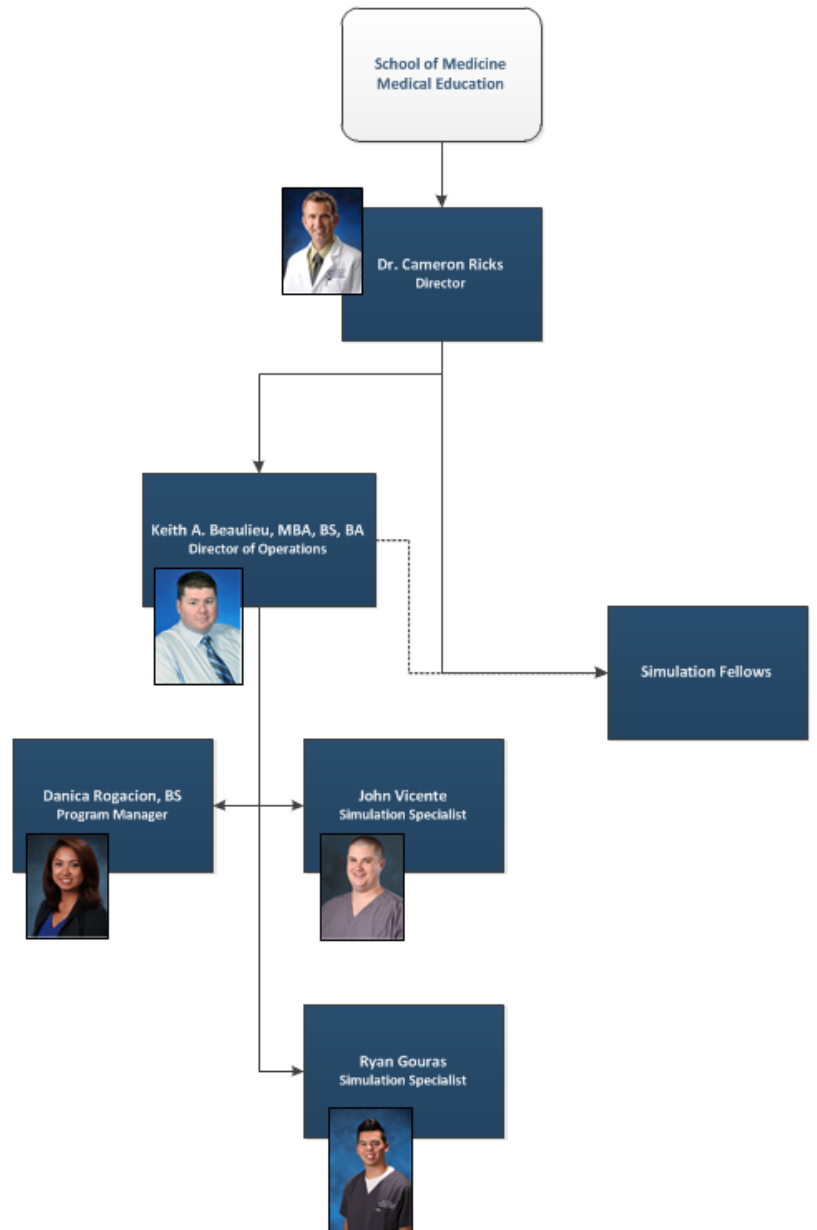
The Medical Education Simulation Center seeks to attract simulation fellows on a yearly basis. This provides additional physician availability in scheduling instructors for core MS simulation sessions.

International Fellow

This year we did have an international simulation fellow, Dr. Mohammad AlKhofi for the Kingdom of Saudi Arabia. Dr. AlKhofi is a trained emergency room physician that spent the academic year learning medical education and simulation as an effective teaching modality.

Emergency Medicine

Dr. Reid Honda was the Emergency Medicine Simulation fellow. We did utilize the EM simulation fellow for about 12.5% of the simulation activities.



Medical Student Core Instructors (2018-2019)

58.8 %

supplied from the Dean’s Scholars

16.3 %

supplied by Dr. Ricks as Medical Director of the Simulation Center.

13.8 %

supplied by volunteers from around the School of Medicine and/or Medical Education

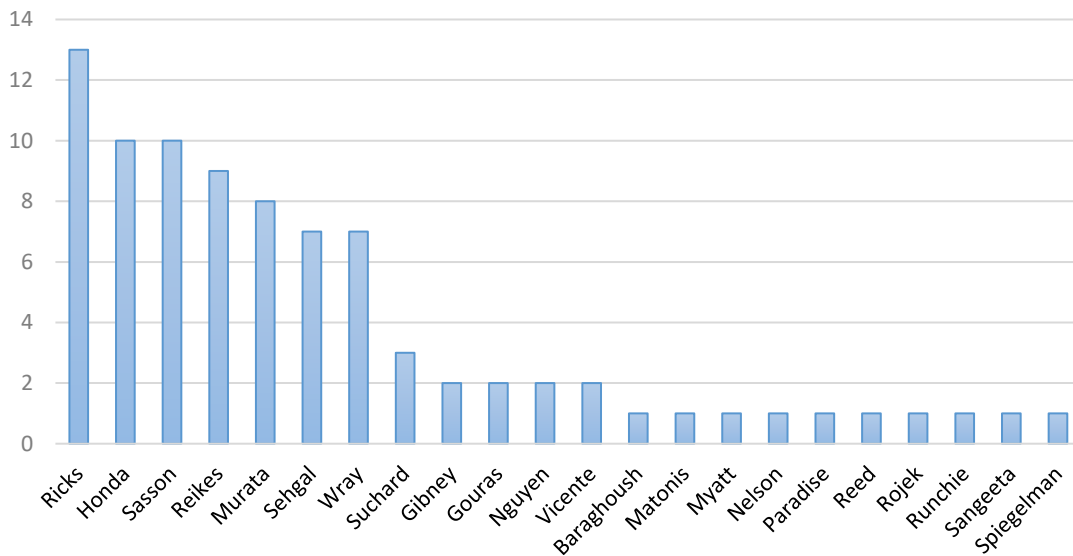
12.5 %

supplied from the Department of Emergency Medicine Simulation Fellow

5.0 %

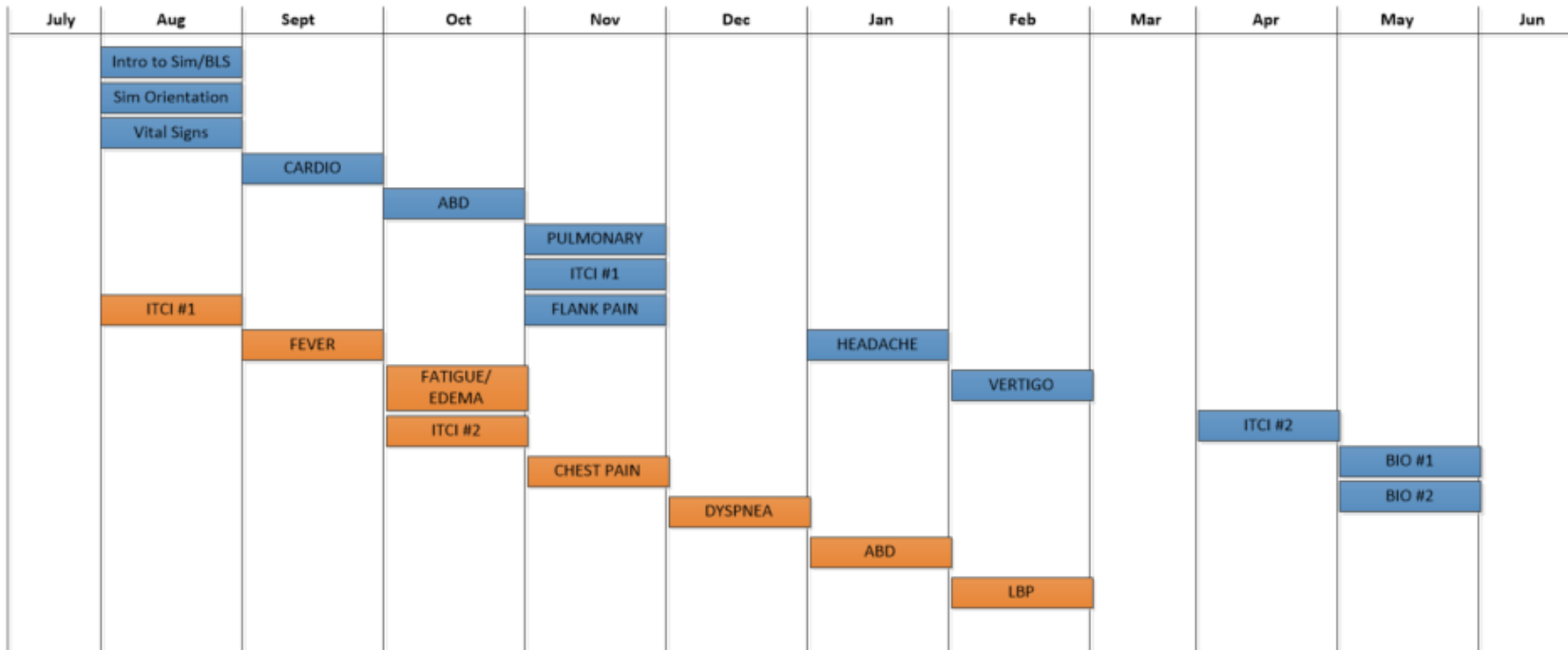
supplied from Simulation Staff (Simulation Specialists and/or Director of Operations)

No. of Instructor Blocks
Core Simulation Sessions



Name	No. of Instructor Blocks	% of Total Sim
Ricks	13	16.3%
Honda	10	12.5%
Sasson	10	12.5%
Reikes	9	11.3%
Murata	8	10.0%
Sehgal	7	8.8%
Wray	7	8.8%
Suchard	3	3.8%
Gibney	2	2.5%
Gouras	2	2.5%
Nguyen	2	2.5%
Vicente	2	2.5%
Baraghoush	1	1.3%
Matonis	1	1.3%
Myatt	1	1.3%
Nelson	1	1.3%
Paradise	1	1.3%
Reed	1	1.3%
Rojek	1	1.3%
Runchie	1	1.3%
Sangeeta	1	1.3%
Spiegelman	1	1.3%

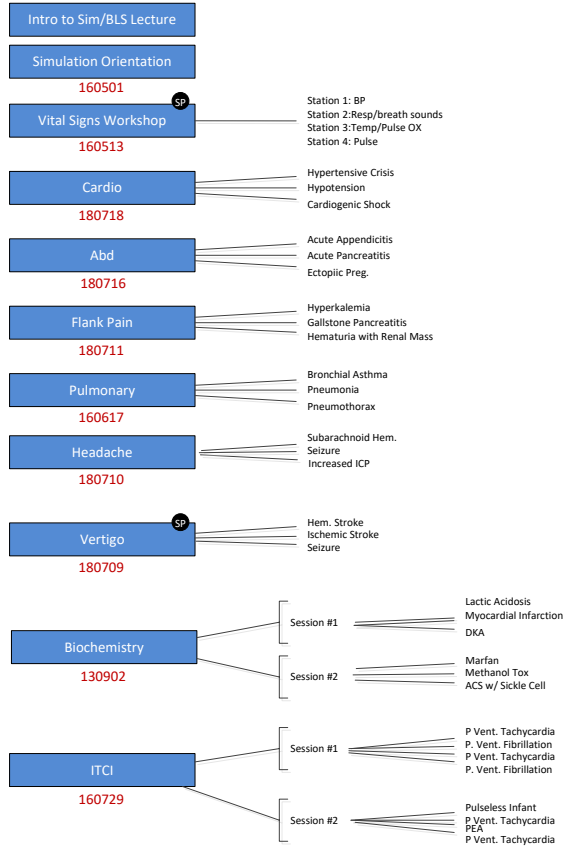
2018-2019 Simulation Sessions



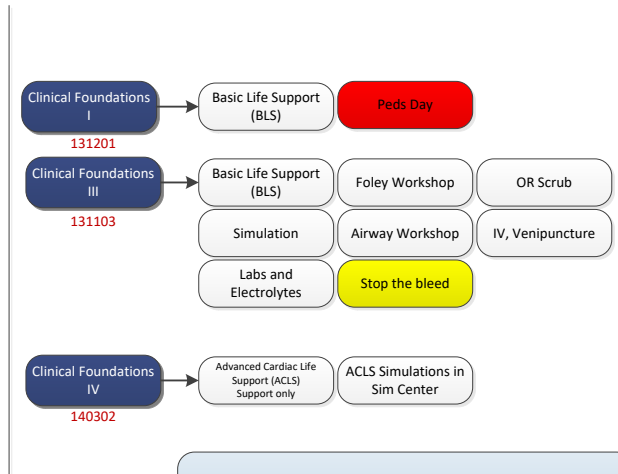
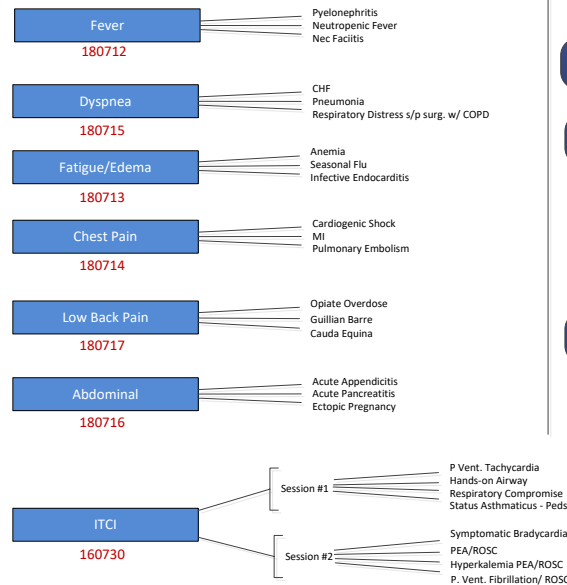
MS 1 Simulation Sessions
 MS 2 Simulation Sessions

Simulation Curriculum Academic Year 2018-2019

Clinical Foundations 1 / MS 1 Simulation



Clinical Foundations 2 / MS 2 Simulation



Legend

Medical Education Simulation Center
UC Irvine School of Medicine

Simulation Session (Based on CF Module)

Endocrine (160601)

- MRSA Sepsis
- Necrotic Fasciitis
- Staphylococcal Pneumonia

Simulation Course Number Current Scenarios used

CV Pharm (Yellow) Denotes New Course/session Added

CV Pharm (Red) Denotes Course Deleted or will not occur

SP Requires standardized patient

Note: MS 3 & MS 4 Clerkships are not listed

School of Medicine

SOM

Hours directly attributed to operational simulation.

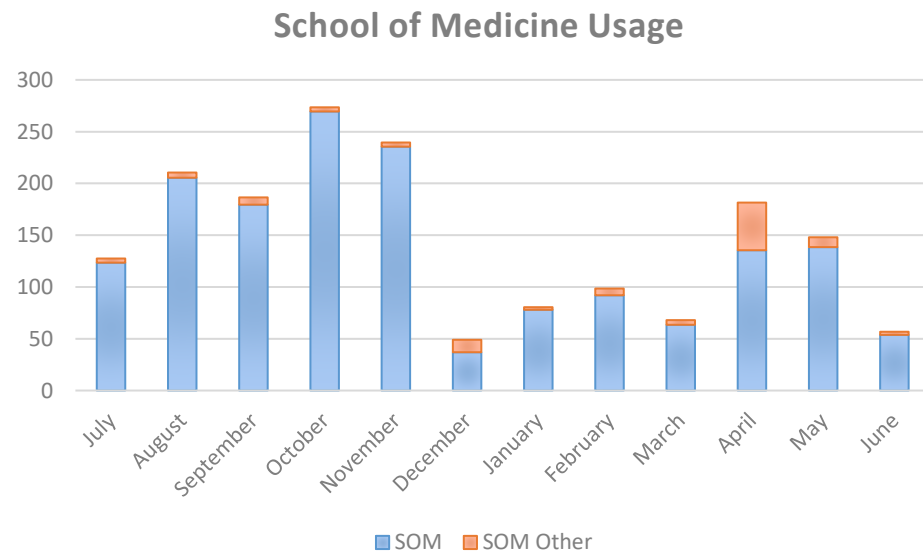
(Examples: MS 1 – MS 4 simulation sessions and CF sessions)

SOM Other

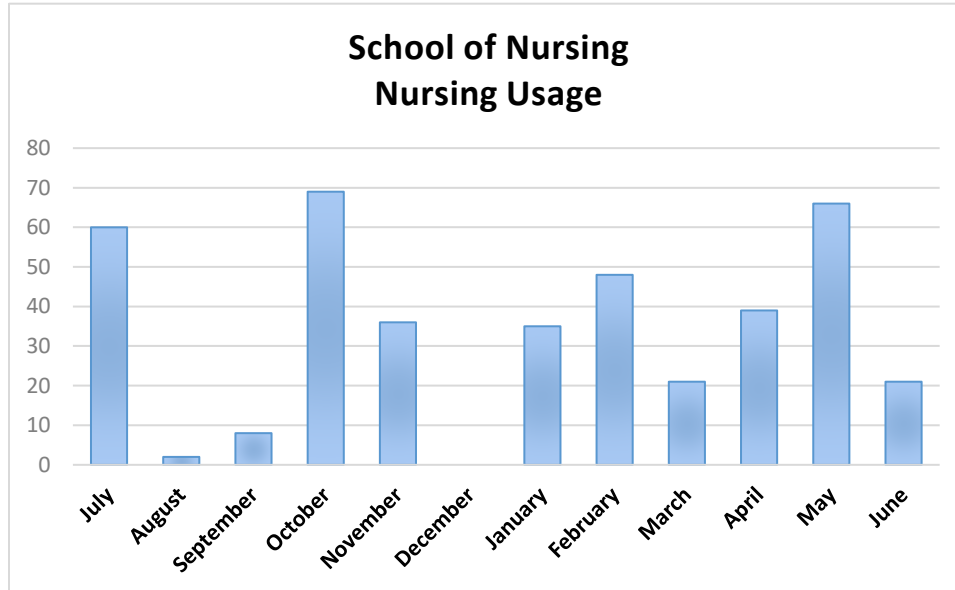
Hours attributed to operational aspects of the center under the guise of SOM.

(Examples include tours, simulation maintenance, meetings)

Month	SOM	SOM Other
July	123.5	4
August	205.5	5
September	179.5	7
October	269.5	4
November	235.5	4
December	37	12
January	78	2.5
February	92	6.5
March	63.5	4.5
April	135.5	46
May	138.5	9.5
June	53.75	3
TOTALS	1611.75	108



School of Nursing



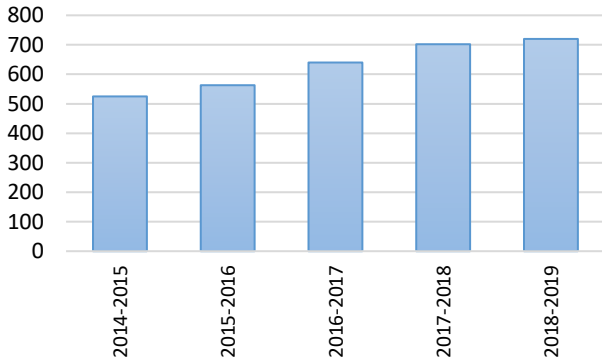
Month	SON Nursing
July	60
August	2
September	8
October	69
November	36
December	0
January	35
February	48
March	21
April	39
May	66
June	21
TOTALS	405

School of Nursing Curriculum

Course Number	Course Name
180118	Future Health Champions (El Sol)
170810	MEPN Acute and Ambulatory Care
190611	MEPN Foundations
180105	NS 112 Foundations/Fundamentals
120113	NS 112 Vital Signs Testing
170613	NS 120 Med/Surg
171018	NS 132 - Pediatrics
141001	NS 150 - Critical Care Bootcamp
190508	NS Preceptorship
181006	NS130 Nursing OB
170523	Nursing Simulation Orientation
170925	OB/GYN Skills Workshop

Operations

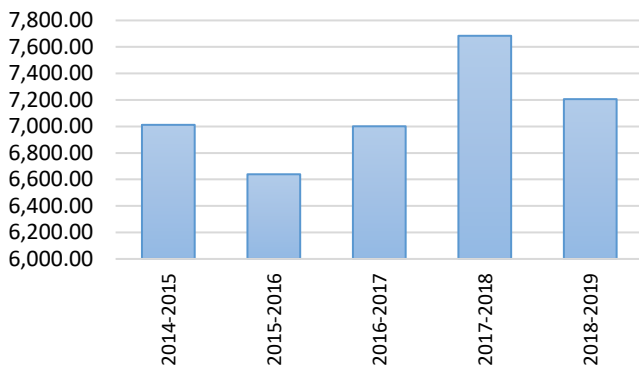
Simulation Sessions Per Year



720

Sessions

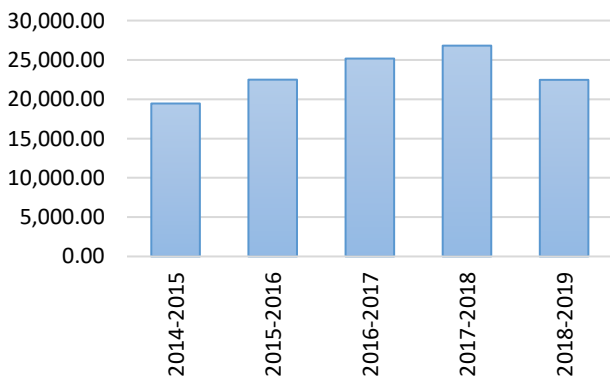
Total Learners Per Year



7,206

Participants

Total Learner Hours Per Year



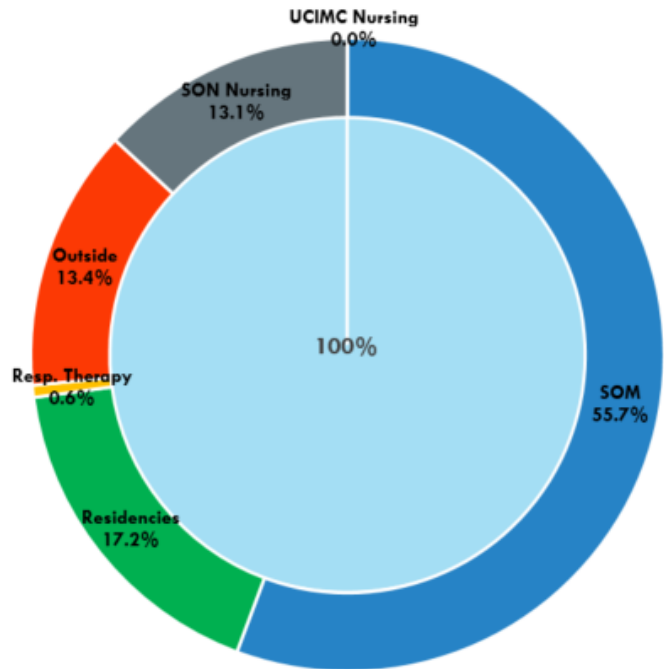
22,459

Learner Hours

Month	Number of Participants	Participant hours	Total Participant Hours	Avg. Time/Part.
July	492	147	1842	3.74
August	602	111	945	1.57
September	547	109	1156	2.11
October	996	151	1826	1.83
November	831	121	1863	2.24
December	264	81	1159	4.39
January	559	104	1688	3.02
February	619	103	1697	2.74
March	357	130	1657	4.64
April	796	143	4680	5.88
May	730	138	2224	3.05
June	413	160	1726	4.18
7206.00	1495.25	22459.75	39.39	

Utilization of the Simulation Center...

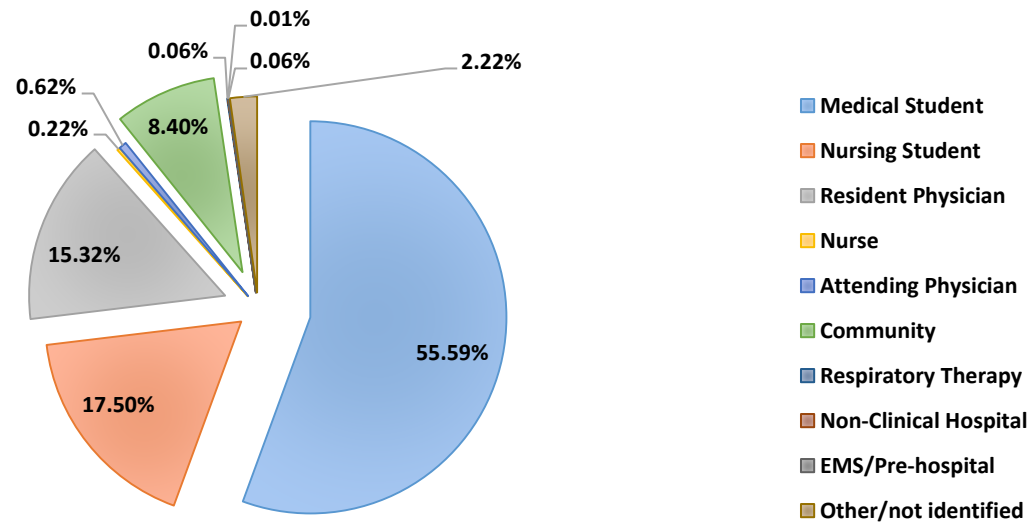
Running Percentage Total	
SOM	55.7%
Residencies	17.2%
Resp. Therapy	0.6%
Outside	13.4%
SON Nursing	13.1%
UCIMC Nursing	0.0%
TOTAL	100%



Total Time by Department

Month	SOM	Anes	SOM Other	EM	Hospital	IM	SON Nursing	Outside	Surgery	Pediatrics	Peds Cardiology	Family Med	Resp. Therapy	UCIMC Nursing	OB/GYN	Neurology	Total
July	123.5	0	4	13	0	0	60	36	0	6.5	13	0	0	0	0	0	256
August	205.5	13	5	13	0	0	2	0	6.5	6.5	0	0	0	0	0	0	251.5
September	179.5	0	7	13	0	0	8	28	9	13	13	0	0	0	0	0	270.5
October	269.5	13	4	0	0	0	69	4	0	0	6.5	0	0	0	0	0	366
November	235.5	0	4	13	0	0	36	6	0	0	6.5	0	0	0	0	0	301
December	37	0	12	13	0	0	0	76	0	0	6.5	5.5	0	0	0	0	150
January	78	13	2.5	13	0	0	35	6	0	6.5	6.5	0	0	0	0	0	160.5
February	92	12	6.5	0	0	0	48	14	0	12	0	0	6	0	0	0	196.5
March	63.5	13	4.5	13	0	0	21	72	9	13	6.5	0	6.5	0	0	0	222
April	135.5	10.5	46	13	0	0	39	20	0	13	6.5	13	6.5	0	0	0	303
May	138.5	13	9.5	0	0	0	66	32	9	6.5	6.5	13	0	0	0	0	294
June	53.75	58.5	3	13	0	21	21	120	0	0	6.5	0	0	0	0	21	317.75
TOTALS	1611.75	146	108	117	0	27	405	414	33.5	77	78	31.5	19	0	0	21	3088.75

Participant Types



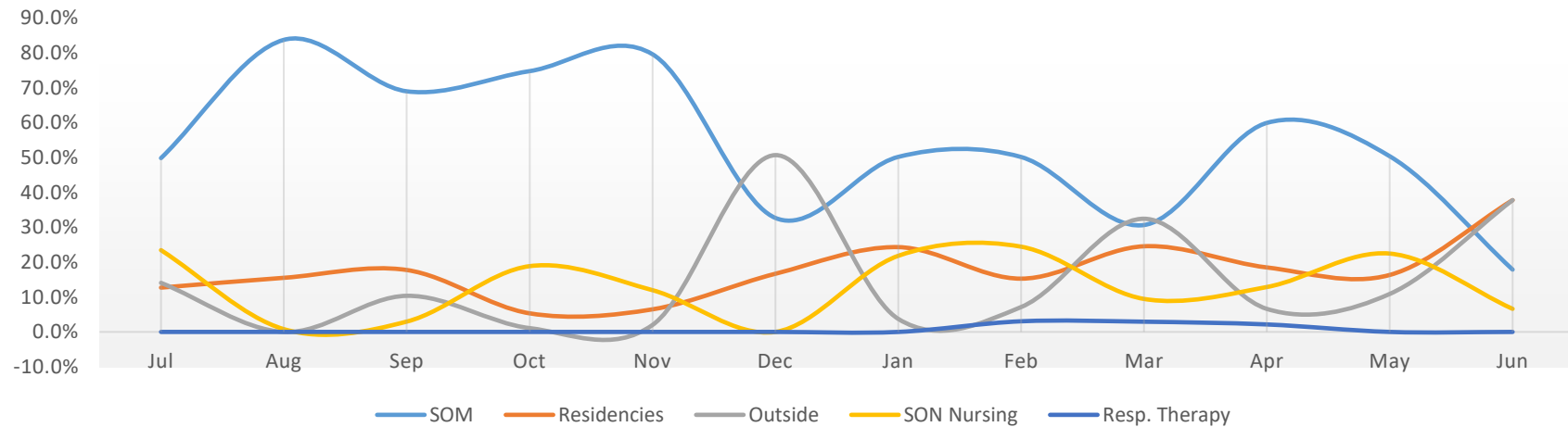
Total Utilization Hours by month

Percentage by Month

Month	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
SOM	49.8%	83.7%	68.9%	74.7%	79.6%	32.7%	50.2%	50.1%	30.6%	59.9%	50.3%	17.9%
Residencies	12.7%	15.5%	17.7%	5.3%	6.5%	16.7%	24.3%	15.3%	24.5%	18.5%	16.3%	37.8%
Outside	14.1%	0.0%	10.4%	1.1%	2.0%	50.7%	3.7%	7.1%	32.4%	6.6%	10.9%	37.8%
SON Nursing	23.4%	0.8%	3.0%	18.9%	12.0%	0.0%	21.8%	24.4%	9.5%	12.9%	22.4%	6.6%
Resp. Therapy	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.1%	2.9%	2.1%	0.0%	0.0%
UCIMC Nursing	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
TOTALS	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Utilization Comparison






% of Time by Category



UCI School of Medicine | Medical Education Simulation Center

Center Users

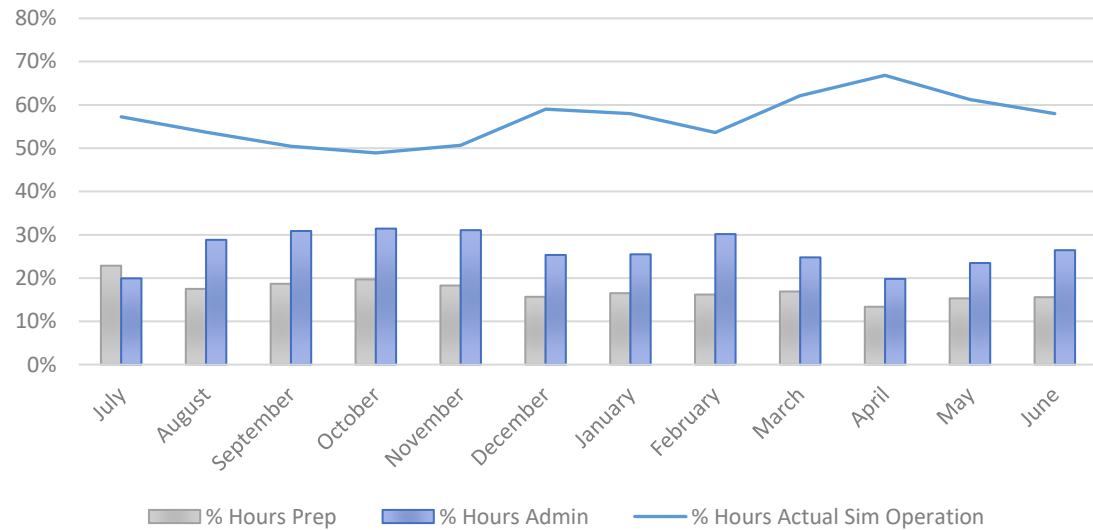
unit = hours

School of Medicine	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	Average
School of Medicine	2318.75	1860.55	2000.45	2036	1810.25	2005.20
<i>Percentage of Time of overall Operations</i>	60.0%	51.4%	61.0%	59.6%	56.8%	
Departments	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	Average
Anesthesia	179.1	132.5	116	130	146	140.72
Emergency Medicine	132.25	58.5	103.2	51	117	92.39
Pediatrics	209.5	229.7	142	115	100.5	159.34
Pediatrics Cardiology	0	58	59	58.5	78	63.38
Internal Medicine	36.5	46	40	42	27	38.30
Family Medicine	0	44.15	36	35	31.5	36.66
Surgery	62.25	46	34.75	43	33.5	43.90
Neurology	0	0	0	0	21	21.00
OB/GYN	0	6	20	2.5	0	9.50
<i>Percentage of Time of overall Operations</i>	19.0%	26.0%	18.2%	17.0%	17.1%	
Hospital	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	Average
Code Training	107	384.5	125	104	0	180.125
Respiratory Therapy (participation with Peds Residency)	0	74.2	62	40.5	19	48.925
Staff Nurses	0	0	0	17	0	17
<i>Percentage of Time of overall Operations</i>	3.0%	10.6%	4.0%	3.0%	0.6%	
School of Nursing	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	Average
School of Nursing (all courses)	64.35	43.25	22.45	213.5	410	150.71
<i>Percentage of Time of overall Operations</i>	2.0%	1.2%	0.7%	6.2%	12.6%	
Other						
<i>Percentage of Time of overall Operations</i>	16.0%	10.8%	16.1%	14.2%	12.9%	

Overall operations includes simulation session time, preparation, teardown, and administrative work by the simulation specialists

Operations in comparison with admin and prep hours

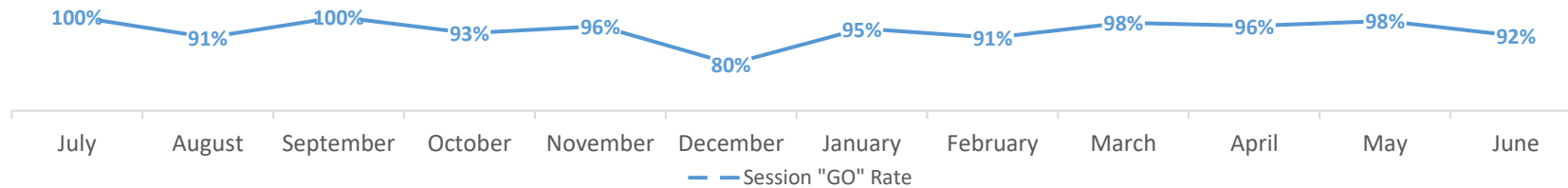
Month	% Hours Actual Sim Operation	% Hours Prep	% Hours Admin
July	57%	23%	20%
August	54%	17%	29%
September	50%	19%	31%
October	49%	20%	31%
November	51%	18%	31%
December	59%	16%	25%
January	58%	17%	25%
February	54%	16%	30%
March	62%	17%	25%
April	67%	13%	20%
May	61%	15%	23%
June	58%	16%	26%



Simulation Center Go Rate

The simulation Center “Go” rate is the difference between the scheduled sessions and the actual sessions that took place. The “go” rate will decrease, as a result, of cancelled sessions for numerous reasons including, but not limited to: instructor no-show, instructor availability, cancelled tours/outreach, and cancelled simulation sessions.

As a center, we strive to be between 95% - 100%. This affords the best possible scheduling solution for students, residents, and other activities.





Transactional Operations

The simulation center had...

431 Separate transactions

90% represented American Heart Association related courses

7% represented Continuing Medical Education

3% represented non-UCI activities

79% were credit card transactions

19% were recharge transactions

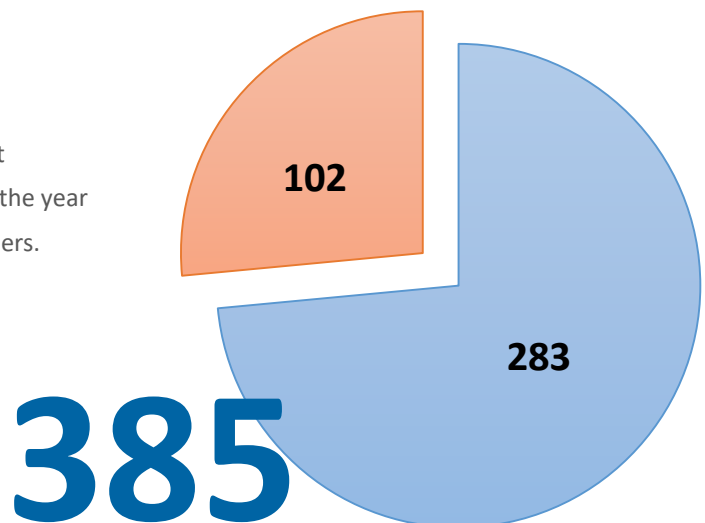


American Heart Association®

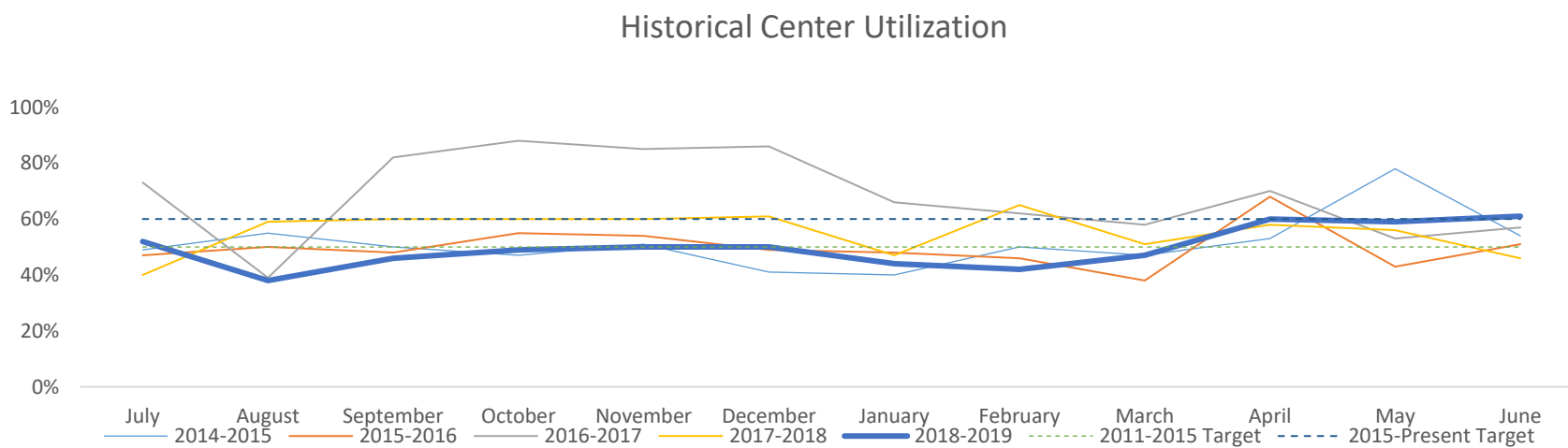
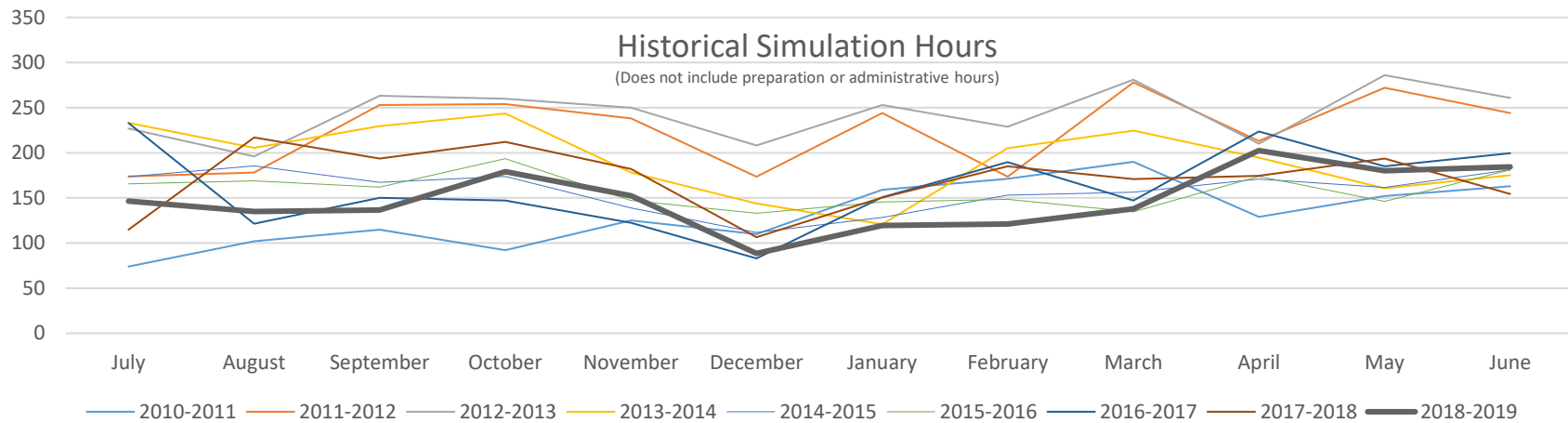
Basic Life Support

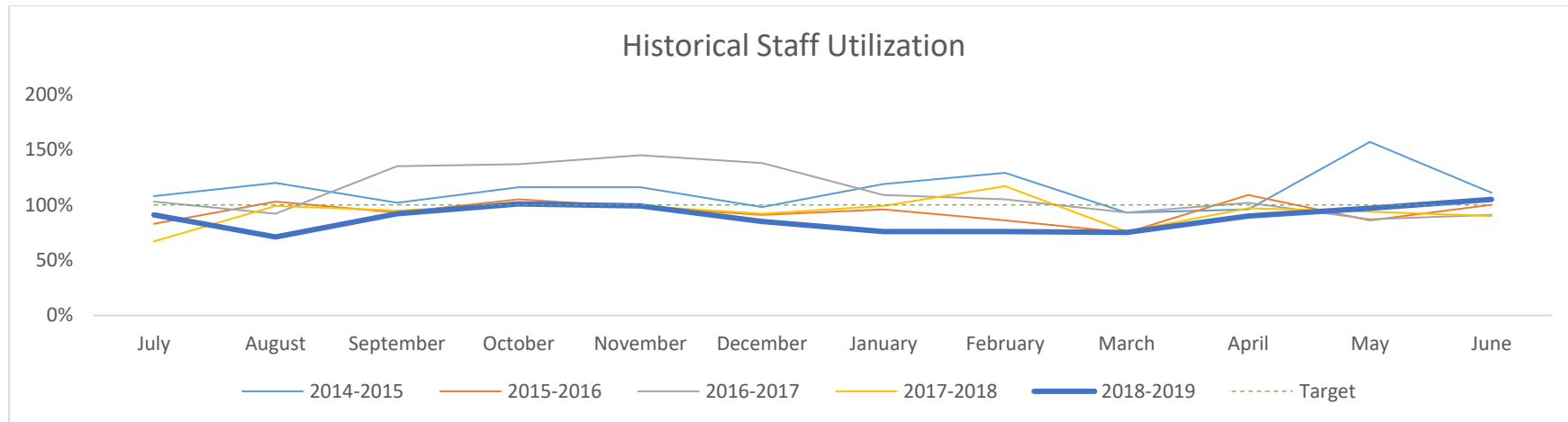
Advanced Cardiac Life Support

The center supported a total of 385 American Heart Association certifications throughout the course of the year for students and both internal and external customers.



Historical Trends





The ideal staffing utilization for the simulation center is to have the staff 100% utilized. Over the year, this utilization has fluctuated a bit based on operational activities and the number of simulation specialists available. Overall, the average staff utilization from 2013 to present is 102% (+2% ↑ than ideal target)

**Average Staff Utilization
July 2013 – June 2019**

102%

**Average Staff Utilization
3 Previous years**

98%

Number of total months > 75% utilization	67
Total Months	72
% of Staff Utilization >75%	93%
Number of total months > 85% utilization	62
Total Months	72
% of Staff Utilization >85%	86%
Number of total months > 90% utilization	55
Total Months	72
% of Staff Utilization >90%	76%

Feedback

Medical Student Year 1 Simulation Sessions (Clinical Foundations 1) Student Feedback

MEDICAL STUDENT YEAR 1	Sim Orientation	Vital Signs	Cardio	Abd	Pulmonary	Flank Pain	Headache	Vertigo	Bio #1 Bio #2	Average
This was a Positive Learning Experience	98.5%	95.6%	98.0%	99.0%	99.0%	100.0%	97.0%	100.0%	98.8%	98%
The course met my expectations	98.6%	95.5%	96.0%	99.0%	99.0%	100.0%	95.0%	100.0%	98.9%	98%
The course met the listed learning objectives	98.6%	95.6%	97.9%	99.0%	99.0%	100.0%	98.0%	100.0%	98.9%	99%
I have a better understanding of the subject matter	98.6%	95.6%	98.0%	99.0%	99.0%	100.0%	96.0%	100.0%	98.4%	98%
This was an effective use of my time	95.7%	93.4%	97.0%	99.0%	98.0%	100.0%	96.0%	100.0%	96.9%	97%
I felt this was a safe learning environment	97.2%	95.6%	97.0%	99.0%	99.0%	100.0%	99.0%	100.0%	100.0%	99%
The simulation center staff and instructors were helpful and responsive	97.1%	95.6%	98.0%	99.0%	99.0%	100.0%	99.0%	100.0%	99.5%	99%
The simulation center was clean/neat/organized	98.6%	95.6%	98.0%	99.0%	99.0%	100.0%	99.0%	100.0%	99.5%	99%
The simulation equipment was in good working order	98.6%	95.6%	97.9%	99.0%	99.0%	100.0%	99.0%	100.0%	100.0%	99%
The resources found on Canvas for this session were helpful	87.2%									87%
I found that it was valuable to have this orientation	94.3%									94%

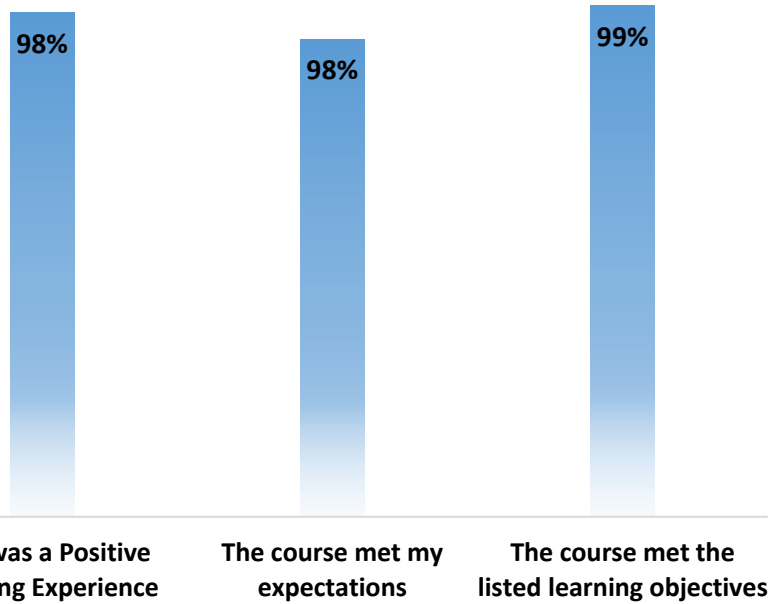
* Data represents percentage of responses that were overall positive

Medical Student Year 2 Simulation Sessions (Clinical Foundations 2) Student Feedback

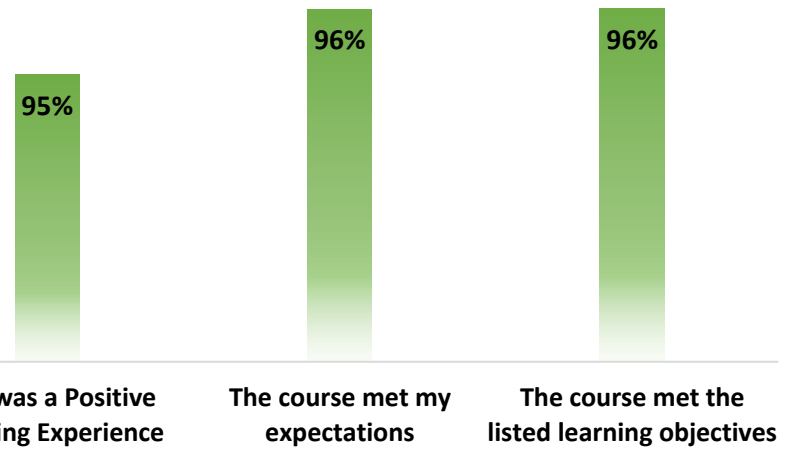
MEDICAL STUDENT YEAR 2	Fever	Fatigue	Chest Pain	Dyspnea	ABD	LBP	Average
This was a Positive Learning Experience	99.0%	99.0%	98.0%	100.0%	100.0%	100.0%	99.3%
The course met my expectations	99.0%	99.0%	98.0%	100.0%	100.0%	100.0%	99.3%
The course met the listed learning objectives	99.0%	99.0%	98.0%	100.0%	100.0%	100.0%	99.3%
I have a better understanding of the subject matter	98.0%	99.0%	99.0%	100.0%	100.0%	100.0%	99.3%
This was an effective use of my time	94.2%	96.1%	95.0%	99.0%	100.0%	100.0%	97.4%
I felt this was a safe learning environment	100.0%	99.0%	100.0%	100.0%	100.0%	100.0%	99.8%
The simulation center staff and instructors were helpful and responsive	99.0%	100.0%	100.0%	100.0%	100.0%	100.0%	99.8%
The simulation center was clean/neat/organized	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
The simulation equipment was in good working order	100.0%	100.0%	100.0%	97.0%	100.0%	100.0%	99.5%

* Data represents percentage of responses that were overall positive

MS 1 AVERAGES ACROSS ALL SIMULATION COURSES

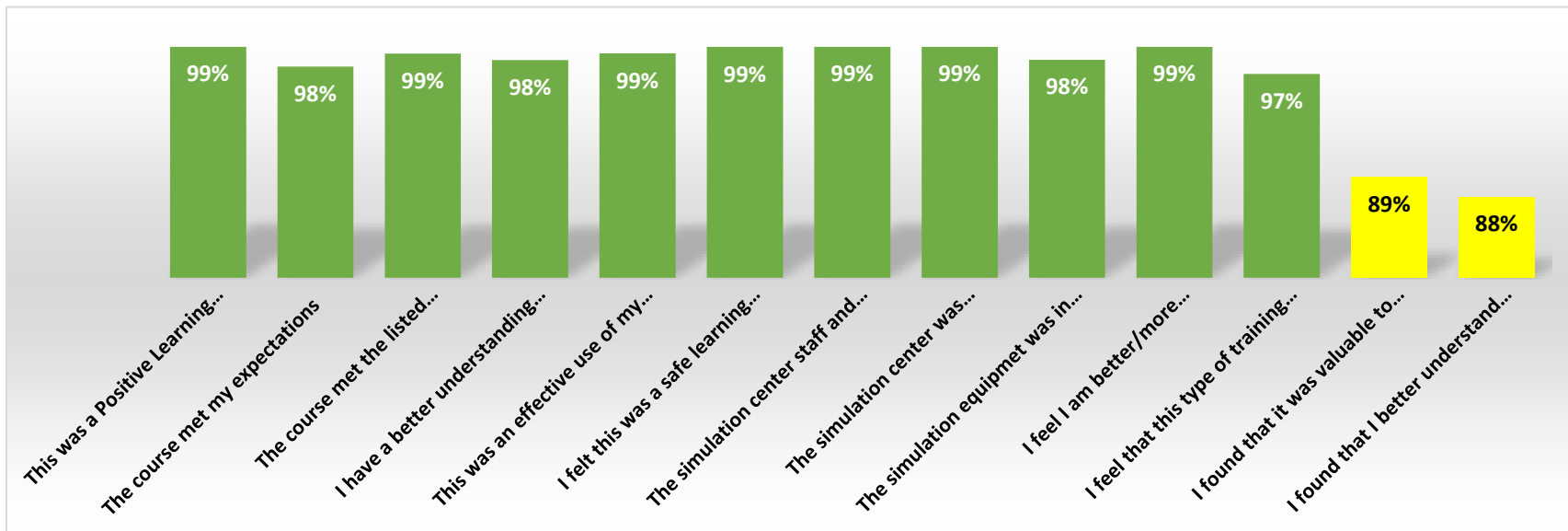


MS 2 AVERAGES ACROSS ALL SIMULATION COURSES



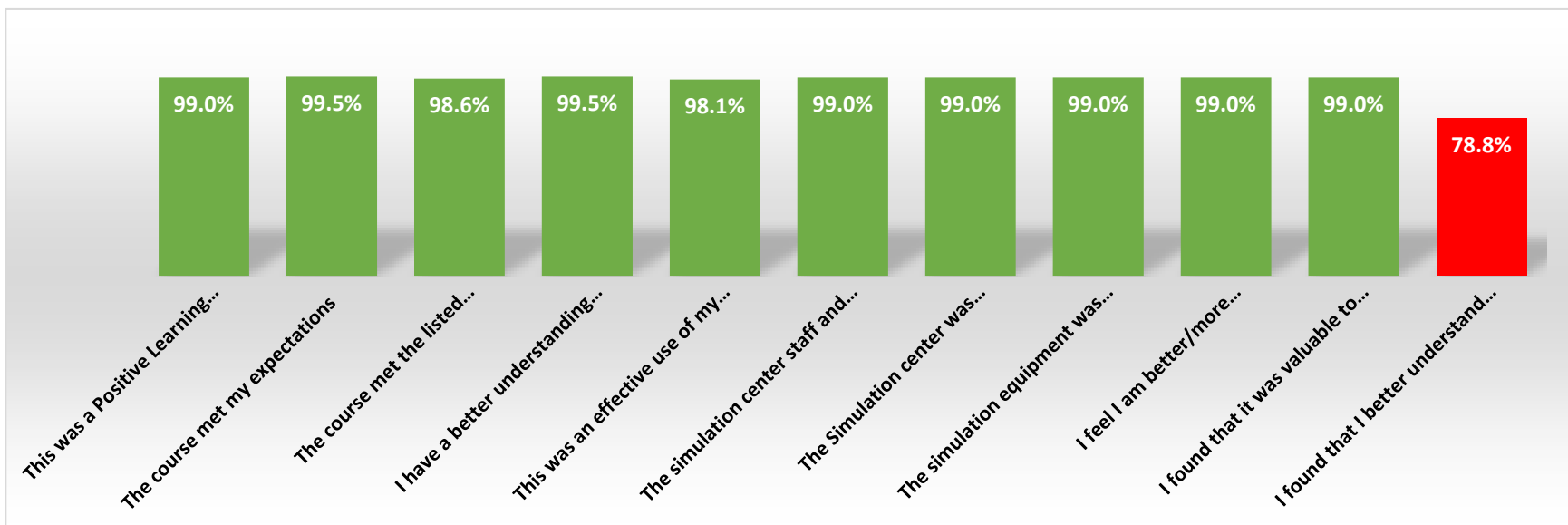
MS 1 Inter-professional Training Critical Incident (ITCI) Training

MS 1 ITCI STATISTICS 2018-2019	Mean Overall Positive
This was a Positive Learning Experience	99%
The course met my expectations	98%
The course met the listed learning objectives	99%
I have a better understanding of the subject matter	98%
This was an effective use of my time	99%
I felt this was a safe learning Environment	99%
The simulation center staff and instructors were helpful and responsive	99%
The simulation center was clean/neat/organized	99%
The simulation equipmet was in good working order	98%
I feel I am better/more prepared to assist someone in BLS/ACLS	99%
I feel that this type of training helps me understand the concepts of BLS/ACLS over the traditional or Heartcode versions of the course	97%
I found that it was valuable to have this training with nursing students	89%
I found that I better understand the role of a nurse in emergency situations	88%



MS 2 Inter-professional Training Critical Incident (ITCI) Training

MS 2 ITCI STATISTICS 2018-2019	Mean Overall Positive
This was a Positive Learning Experience	99.0%
The course met my expectations	99.5%
The course met the listed learning objectives	98.6%
I have a better understanding of the subject matter	99.5%
This was an effective use of my time	98.1%
The simulation center staff and instructors were helpful and responsive	99.0%
The Simulation center was clean/neat/organized	99.0%
The simulation equipment was in good working order	99.0%
I feel I am better/more prepared to assist someone in BLS/ACLS	99.0%
I found that it was valuable to have this training with nursing students	99.0%
I found that I better understand the role of a nurse in emergency situations	78.8%



Inter-professional Simulation Training

Interprofessional Team Critical Incident (ITCI) Training - Medical Student Year 1

I Found It Valuable To Have This Training As....

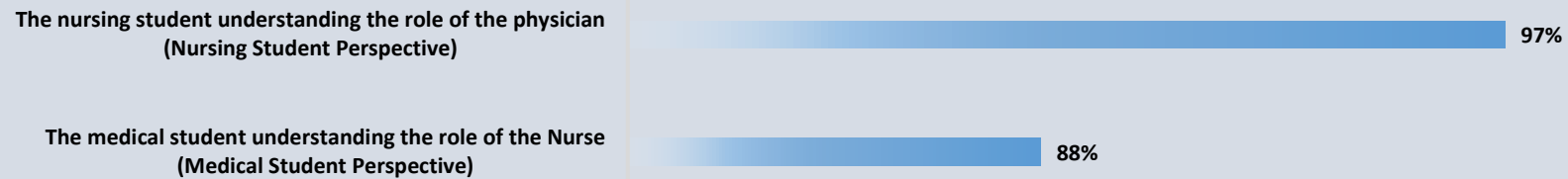


Interprofessional Team Critical Incident (ITCI) Training - Medical Student Year 2

I Found It Valuable To Have This Training As....



Interprofessional Team Critical Incident (ITCI) Training - Medical Student Year 1



Interprofessional Team Critical Incident (ITCI) Training - Medical Student Year 2



Research

UCI School of Medicine Medical Education Simulation Center		Simulation Center Research - Current	
Subject	Are Heel compressions as Effective as Tradition Chest Compressions	Current	Yes
IRBNumber	2019-5119	Closed	No
LastName	Ricks	Funding	Non-funded
FirstName	Cameron		
Co-Investigators	Al-Khofi, Beaulieu, Keith; Rogacion, Danica; Vicente, John; Gouras, Ryan	Notes	
Description		Note: This IRB is being held in the Department of Anesthesiology	
		-IRB app started 1/7/2019	
		-IRB application acceptance 4/17/2019	
		-IRB still in queue 5/16/2019	
		-IRB determination as Activities that do not constitute Human Subjects Research, and cleared to proceed. 6/28/2019	

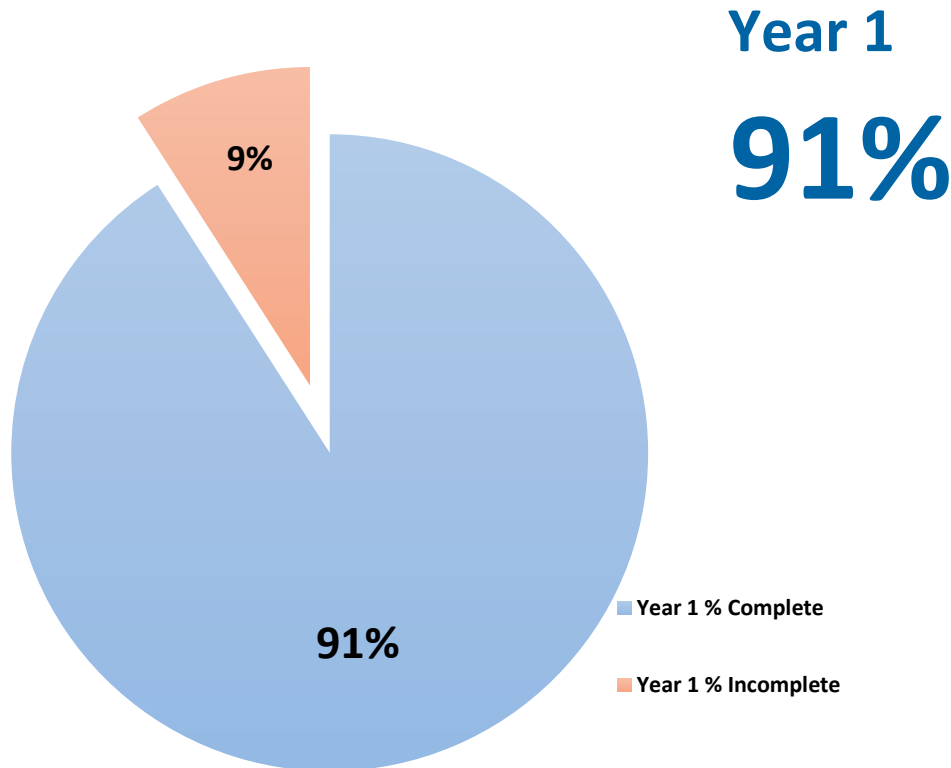
The Medical Education Simulation Center is currently directly involved with one (1) simulation-related research activity. This research is being administratively managed through the Department of Anesthesiology and Perioperative.

Strategic Planning

The Simulation Center is one (1) year into the Strategic Plan.

There were 21 total measures the simulation center wanted to accomplish during the first year of the strategic plan.

The center was able to accomplish 91% of the measures established.



Strategic Goals

Provide a safe simulated environment for learning, where quality patient care and professionalism is emphasized, through the utilization of evidence-based clinical decision-making and evaluation methods to ensure best practice

Foster simulation research to improve healthcare education, processes, and outcomes

Develop new ways to integrate inter-professional scenarios in the simulation curriculum to enrich multidisciplinary learning

Maintain transparency, communication, efficiency and feedback to guarantee high quality stakeholder satisfaction

Create simulation-based educational programs to assist in maintenance of certification, to improve and enhance learner competence, and to serve as outreach to professional organizations

Year 1 Deliverables

	Measureable	Progress	Note(s)
1	Faculty Evaluations	Complete	
2	Staff Evaluations	Complete	
3	100% Core Medical Student Feedback	Complete	
4	Policy: Psychological and Physical Safety for Learners	Complete	
5	100% Simulation curriculum Reviewed	Complete	Reviewed by Dr. Wray
6	Policy: Simulation/ Human Performance Research	Complete	
7	Guidelines: Simulation/ Human Performance Research	Complete	Guideline document built Research can be established via IRB through Dr. Ricks or Dr. Wray
8	Annual Report	Complete	
9	Student Survey Report	Complete	
10	Code Training Report	UTC	Medical Education Simulation Center no longer holds code training over at UCIMC due to funding concerns
11	Staff Meetings Quarterly	Complete	
12	Meeting with CF Director	Complete	
13	Director of Operations attend at least 80% of "MedEd All Call" and Present Status	Complete	
14	Director of Operations attend at least 80% of Directors Meetings and Present Status	Complete	
15	Report of 100% Simulation Activities to ACS	Complete	
16	>95% Mean Positive Survey Results on Center and Staff items	Complete	
17	Staff Utilization >90% Average Center Utilization >60% Average Center "GO" rate >95% Average	In-Progress	Average center utilization = 50% (-10%) Average staff utilization = 88% (-2%) Average center "go" rate = 94% (-1%)
18	Professional Development: Director/ DoO attendance at International Meeting for Simulation in Healthcare, targeted training, or equivalent	Complete	Director - Attended IMSH. DoO attended I/ITSEC
19	Simulation Quality Improvement Program	Complete	
20	Simulation Faculty Development Program	Complete	
21	Standardized Curriculum Development Process (ADDIE)	Complete	

Quality Initiatives

Internal (within department/Medical Education)

Policy and Procedures

Internally we have updated the department's policies and procedures to reflect current policies and procedure.

Strategic Planning

We are in year 1 of the strategic plan.

Student post-simulation Surveys

We review the student surveys and make changes to the curriculum and scenarios. We provide the instructors copies of the surveys as well.

Simulation Operations Database

Director of Operations maintains an operational database to store and track key operational and historical data.

Course reviews yearly

We review each course through the request and preparation of the simulation session.

Evaluation of Simulation Instructors

The Director or designee evaluates all active simulation instructor yearly.

External (Hospital/CME)

Maintenance of Certification in Anesthesia (MOCA)

Held 4 MOCA courses; trained 30 Anesthesiologists

American Society of Anesthesiologists (ASA)

Maintain Simulation Education Network (SEN) endorsement

American College of Surgeons Accredited Education Institute

Granted re-accreditation

American Society of
Anesthesiologists[®]
— Endorsed Program
Simulation Education Network



Outreach

This year, the Medical Education Simulation Center opened its doors and participated in the following outreach organizations:

Student National Medical Association

Pre-Med Camp

Summer Surgery

El Sol Academy (Future Health Champions)

UCI Post-Bacc Program

World of Medicine

EMIG Activities

ASIG Activities

Simulation Interest Group Activities

Publications & Presentations

Manuscript Publications

1. Anne Beissel, Christian Bauer, Marc Lilot, Keith Beaulieu, Baptiste Balanc, Thomas Rimmelé, Cameron Ricks. A Trans-Atlantic High-Fidelity Mannequin Based Telesimulation Experience. *Anaesthesia Critical Care & Pain Medicine*, Volume 36, Issue 4, August 2017, Pages 239-241 <http://www.sciencedirect.com/science/article/pii/S2352556816301680>.
2. Raphael D, Lin S, Canales C, Beaulieu K, Ricks C. Obstructive Mucus Plug in the Prone Position. *MedEdPORTAL Publications*; 2015. Available from: <https://www.mededportal.org/publication/10016> http://dx.doi.org/10.15766/mep_2374-8265.10016
3. Abdelshehid, C, Quach, S, Nelson, C, Graversen, J, Lusch, A, Zarraga, J, Alipanah, R, Landman, J, McDougall, E. High-Fidelity Simulation-Based Team Training in Urology: Evaluation of Technical and Nontechnical Skills of Urology Residents During Laproscopic Partial Nephrectomy. *Journal of Surgical Education*, September/October 2013, Volume 70/Number 5.
4. Shbeeb, A, Nelson, C, Strom, S, Mecca, R. Postanesthesia Care Unit Simulation: Acute Upper Airway Obstruction Secondary to Laryngospasm. *Case Report. Simulation in Healthcare*, Vol. 8, Number 2, April 2013
5. Gavazza, P, Rosenbaum, A, Canales, C, Kudrick, N, Lin, S. Intraoperative Rhabdomyolysis: Simulation Case Scenario. *Simulation in Healthcare*, Oct 2011; 6(5): 304-9. PMID: 21979829
6. Chun D, Gavazza P, Hollister C, Canales C, Lin S. Simulation Scenario- Myocardial Ischemia in a Patient with a Cardiac Transplant after Subarachnoid Block . *MedEdPORTAL*; 2011. Available from: www.mededportal.org/publication/9029.
7. Cannesson, M., Pestal G., Ricks, C., Hoeft, A., Perel, A. "Hemodynamic Monitoring and Management in Patients Undergoing High Risk Surgery: A Survey among North American and European Anesthesiologists." *Crit Care*. 2011 Aug 15: 15(4)

Book/Chapter Publication

1. Ricks, C. "Addison's Disease," Chapter 6, *Essence of Anesthesia Practice*, 3e, 2010.

Abstract Publications

1. Cameron Ricks; Jereme Brammeier; Keith Beaulieu; Ryan Field, Esther Banh; Danica Rogacion; Corey Nelson; Joe Rinehart MD. Ventriculostomy Management Training: Computer Based Training vs Simulation Training. Accepted to be presented at ASA 2019.
2. Cameron Ricks, Michael Ma, Keith Beaulieu, Danica Rogacion, Razan Duella, Joseph Rinehart. Asynchronous Learning/Simulation Assessment and Procedural Confidence. Presented at Presented at American Society of Anesthesiology (ASA). October 2018.
<http://asaabstracts.com/strands/asaabstracts/abstract.htm?year=2018&index=15&absnum=5032>
3. Ricks, C; Brammier, J; De Los Santos, Joseph; Beaulieu, K; Field, R; Nelson, C; Rogacion, D; Rinehart, J. Computer-based Training and Simulation for Ventriculostomy Management Training. Presented at ASA 2017.
4. Beaulieu, Keith; Rogacion, Danica; Vicente, John; Ricks, Cameron. Integration of Simulation in Undergraduate Medical Education as an Elective Course. Presented at IMSH 2017. Published in Simulation in Healthcare: The Journal of the Society for Simulation in Healthcare, December 2016 (11:6), Pg. 452.
5. Anne Beissel, Christian Bauer, Marc Lilot, Keith Beaulieu, Baptiste Balanc, Thomas Rimmelé, Cameron Ricks. Pitfalls of International Telesimulation. Presented at IMSH 2016. Published in Simulation in Healthcare: The Journal of the Society for Simulation in Healthcare, December 2015 (10:6), Pg. 399.
6. Keith Beaulieu, Cris Hanacek, John Vicente, Anne Beissel, Charlene Beaulieu, Cameron Ricks. Foley Skills Competency for 2nd Year Medical Students. Presented at IMSH 2016. Published in Simulation in Healthcare: The Journal of the Society for Simulation in Healthcare, December 2015 (10:6), Pg. 447.
7. Keith Beaulieu, Cris Hanacek, John Vicente, Cameron Ricks. Emesis During Simulation: A Low Cost Apparatus. Presented at IMSH 2016. Published in Simulation in Healthcare: The Journal of the Society for Simulation in Healthcare, December 2015 (10:6), Pg. 461.
8. Rola Abdulrahman Alrabah; Anne Beissel; Cris Hanacek; Cecelia Canales; Keith A. Beaulieu; John Vicente; Julie Sayegh; Christopher McCoy; Cameron Ricks. Residents as Teachers: A Randomized Controlled Non-inferiority Trial. Presented at IMSH 2016.

9. Ricks, C., Beaulieu, K., Gohil, S., Rahman, A. High Fidelity Medical Student Microbiology Simulation. Presented at IMSH 2015. Published in *Simulation in Healthcare: The Journal of the Society for Simulation in Healthcare*, December 2014 (9:6), Pg. 464.
10. Ricks, C., Lin, S., Canales, C., Nelson, C., Strom, S. Evaluation of Simulation Education using Anesthesia Information System. Presented at IMSH 2014. Published in *Simulation in Healthcare: The Journal of the Society for Simulation in Healthcare*, December 2013, Pg. 581.
11. Charlotte Lee, Bernie Milbury, Maureen Movius, Cameron Ricks, Ryan Lombardi, Kenneth Seiff. Interprofessional Communication and Teamwork for Improving Clinical Outcomes. Presented at the "Magic in Teaching" Conference, Irvine, California. November 13, 2013.
12. Suzanne Strom, Luanna Yang, Cecilia Canales, Ryan Abrego, Jamie Gould, Mark Langdorf. Resuscitation Reality Check: Using High-Fidelity Simulation to Evaluate Graduating 4th Year Medical Students' Resuscitation Skills for Curricular Assessment. Presented at IMSH 2012.
13. Jason Y. Lee*, Phillip Mucksavage, Neil Shah, Cecilia Canales, Elspeth M McDougall, Sharon Lin. High Fidelity Team-based Simulation Training: Laparoscopic Renal Vein Injury Scenario. Presented at the 29th World Congress of Endourology and SWL (WCE2011) in Kyoto, Japan December 2011.
14. Cameron J. Ricks, M.D., Neil S. Shah, M.D., Cecilia Canales, M.P.H., Jason Lee, M.D., Sharon L. Lin, M.D. Assessment of Anesthesiology Resident Non-Technical Skills Using a High-Fidelity Simulated Renal Vein Injury Model. Presented in Chicago Oct 2011 to be published at *Anesthesiology* October 2011. A170
15. Darren R. Raphael, M.D.,M.B.A., Cecilia Canales, M.P.H., Zeev N. Kain, M.D.,M.B.A., Suzanne L. Strom, M.D., Sharon Lin, M.D. Simulation-Based Interviews Identify Outlier Anesthesiology Residency Candidates. Presented in Chicago. Oct 2011 to be published at *Anesthesiology* October 2011. A170
16. Cecilia Canales, Sharon Lin, Suzanne Strom, Jason Lee, Zeev Kain. Surgical Simulation Training Enhances Anesthesiology Resident Communication in the Operating Room. Presented at 2011 ACGME Annual Educational Conference, Nashville Tennessee.
17. Lin, S, Raphael, D, Canales, C, Strom, S, Kain, Z. Simulation-Based Interviews for Selection of Anesthesiology Residency Candidates. *Anesthesia & Anesthesiology*. 2011 S-146. Presented at IARS 2011 in Vancouver.

Workshop Presentations

1. McCoy C., Alrabah R., Beaulieu, K., Sayegh, J., Vicente, J., Ricks, C. Telesimulation: Blazing a New Trail in Medical Education. Podium Presentation, International Meeting for Simulation in Healthcare, January 2016.
2. Ricks, C., Ahearn, S., Beaulieu, K., Abrego, R., Strom, S. Integrating High-Fidelity Simulation into your OSCEs. Podium Presentation 2014 International Meeting for Simulation in Healthcare, January 2014.
3. Park C, Strom S. *Milestones: Patient Care 1*. Workshop presented at the Society for Education in Anesthesia (SEA) Meeting, SEA Simulation Committee, June 2013, Salt Lake City, UT.
4. Park C, Pardo M, Littlewood K, Navedo A, Strom S. *Simulation Instructors Course: Preparation for MOCA. Preconference workshop* presented at the Society for Education in Anesthesia (SEA) Meeting, SEA Simulation Committee, May 2013, Salt Lake City, UT.
5. Kacmar R, Theilken L, Jasper L, Park C, Strom S. *Simulation Design and Debriefing for Dummies*. Workshop presented at the International Meeting for Simulation in Healthcare, January 2013, Orlando, FL.
6. Arciaga P, Banerjee A, Blevins A, Campbell C, Dean L, Hatch D, Hwang J, Kacmar R, Levy R, Lighthall D, Lipman S, Liu L, Mclvor W, Pardo M, Park C, Ross V, Shimabukuro D, Steigler M, Strom S, Thomas J, Torsher L, Wald S, Weigner M. *Simulation LIVE! Workshop* presented at the 2012 annual meeting for the American Society of Anesthesiologists, October 2012, Washington, D.C.
7. Park, CS, Strom, SL, Littlewood, KE, Pardo, MC. *Incorporating Simulation to Meet the ACGME Simulation Requirement*. Workshop presented at Society for Education in Anesthesia (SEA) Meeting, June 2012, Milwaukee, WI.
8. Cecilia Canales, MPH, Corey Nelson, MD; Ryan Abrego; Jamie Gould, BS; Cameron Ricks, MD; Suzanne Strom, MD. *Simulation Beyond the Manikin*. Workshop presented at the American Association of Medical Colleges, Western Group on Educational Affairs Meeting, Monterrey, CA, April 2012.
9. Suzanne Strom, Cecilia Canales. *How to integrate medical simulation into all four years of the medical school curriculum in six months or less*. Presented at WGEA for AAMC in Stanford, CA on May 2011.

10. Cecilia Canales, Jamie Gould, Ryan Abrego, Cameron Ricks. *Contingency Planning for Confederates*. Presented at the First Regional meeting on Simulation at Loma Linda, CA on April 2011
11. Sharon Lin, MD; Suzanne Strom, MD; Cecilia Canales, MPH; Ela Cudilo, MD; Levina Tran, MD; Shelby Walters, MD; Elena Paik Chung, MD; Stephanie Cha, MD; Ryan Abrego. *"An Evening of Simulation."* Presented at the American Association of Clinical Directors (AACD) Perioperative Leadership Summit. March 2011.
12. Sharon Lin, MD; Suzanne Strom, MD; Cecilia Canales, MPH; Jason Lee, MD and Zeev Kain, MD, MBA. *Impact of Cross-Training on Perspectives in the Operating Room: Surgical Simulation for Anesthesiology Residents*. Presented at International Meeting on Simulation in Healthcare (IMSH) January 2011
13. Suzanne Strom, MD; Cecilia Canales, MPH; Sharon Lin, MD. *MOCA Preparation: Simulation Based Training in Critical Incident Management and Teamwork*. Presented at the American Society of Anesthesiologists Annual Meeting, October 16, 2010

Grants Submitted

Ricks C, Beaulieu K. (2013) *Inter-professional Team Critical Incident (ITCI) Training*. Josiah Macy Jr. Board Grant

Ricks C, Beaulieu K (2014) *Inter-professional Team Critical Incident (ITCI) Training*. UniHealth Foundation

Ricks C, et al. (2014) UC Simulation Consortium. University of California Office of the President.

Center History

MEDICAL DIRECTOR

2010-2011	Dr. Sharon Lin
2011-2013	Dr. Elizabeth McDougal
2013-Present	Dr. Cameron Ricks

DIRECTOR OF OPERATIONS

2010-2013	Cecilia Canales, MPH
2013-present	Keith Beaulieu, MBA, BS, BA

SIMULATION SPECIALISTS

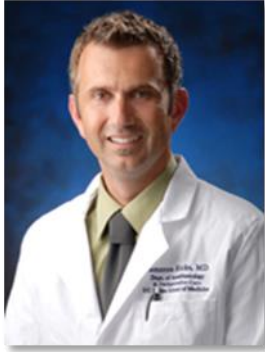
2010-2014	Ryan Abrego (Lombardi)
2010-2014	Jamie Gould (Martin), BS
2013-2015	Cris Hanacek, BS
2013-present	John Vicente
2015-2016	Eilene Tellez
2017-present	Ryan Gouras, BS

ADMINISTRATIVE ASSISTANT/PROGRAM MANAGER

2012-2013	Geneva Rangel
2013-2015	Catarina De Carvalho
2015-present	Danica Rogacion, BS

FIRST SIMULATION

2 September 2010



CAMERON RICKS, MD
DIRECTOR



KEITH A. BEAULIEU, MBA, BS, BA
DIRECTOR OF OPERATIONS



DANICA ROGACION, BS
PROGRAM MANAGER

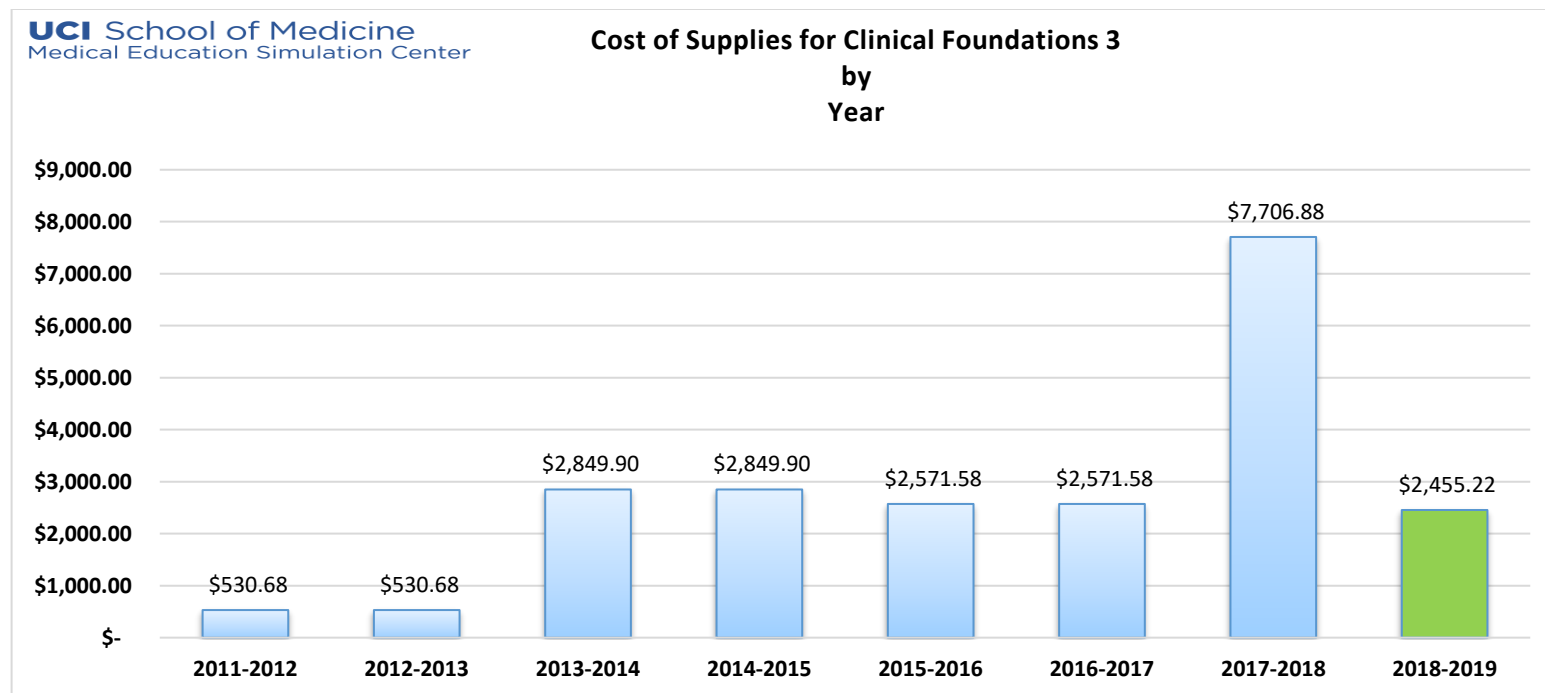
Contact Information

Medical Education Simulation Center
836 Health Sciences Rd. Suite 2118
Tel 949-824-8835
www.medsim.uci.edu

Appendix A

Clinical Foundations 3

Clinical Foundations 3 Simulation activities traditionally have centered on rotating medical students through various medical simulation scenarios and skills learning stations such as: Foley insertion, intravenous catheter insertion, gowning and gloving. The outlier year (2017-2018) represents the center hiring standardized patient nurses to come in to teach the medical students intravenous insertion and Foley insertion. For the 2018-2019 year, Dr. Wray sought out volunteers from the Bill and Sue Gross School of Nursing to help teach medical students IV insertion and Foley insertion.



Appendix B

Simulation Curriculum History

ACADEMIC YEAR 2010-2013

Academic year 2010-2013 saw the creation of an increase of the use of simulation in the basic science courses from 0 courses/session to 18 courses that were tied to the basic science course for the first and second year medical students.

ACADEMIC YEAR 2013-2014

Academic Year 2013-2014 saw no change in the curriculum

Core MS 1 & 2 Courses/Sessions Added	

Core MS 1 & 2 Courses/Sessions Dropped	

Total Instructor Blocks Needed: 36
 Total number of scenarios developed: unknown

ACADEMIC YEAR 2014-2015

Academic Year 2014-2015 saw the addition of Inter professional Team Critical Incident (ITCI) training in the first 2 years of medical school. This a rapid-cycle deliberate practice simulation modality. It included 4 sessions in the MS 1 year that focused on BLS and team dynamics. MS 2 year had a total of 4 sessions focused on BLS, elements of ACLS, and breaking bad news.

Core MS 1 & 2 Courses/Sessions Added	
MS 1 ITCI #1	MS 2 ITCI #1
MS 1 ITCI #2	MS 2 ITCI #2

MS 1 ITCI #3	MS 2 ITCI #3
MS 1 ITCI #4	MS 2 ITCI #4

Core MS 1 & 2 Courses/Sessions Dropped	

Total Instructor Blocks Needed: 70
Total number of scenarios developed: 36

ACADEMIC YEAR 2015-2016

Academic Year 2015-2016 saw the addition of an extra biochemistry and Neuroscience session respectively. This year also saw the reduction of MS 1 ITCI from 4 sessions down to 2.

Core MS 1 & 2 Courses/Sessions Added	
MS 1 Biochemistry #2	
MS 1 Neuroscience #2	

Core MS 1 & 2 Courses/Sessions Dropped	
MS 1 ITCI #3	
MS 1 ITCI #4	

Total Instructor Blocks Needed: 72
Total number of scenarios developed: 6

ACADEMIC YEAR 2016-2017

Academic year 2016-2017 saw a dramatic shift in the simulation curriculum away from the basic science module footprint of the past. The simulation sessions were derived largely from a clinical foundation module standpoint. New course titles and course numbers were derived.

Core MS 1 &2 Courses/Sessions Added	
MS 1 Simulation Orientation	MS 2 Respiratory
MS 1 Vital Signs Workshop	MS 2 Hematology
MS 1 Hyper/Hypotension	MS 2 Cardio
MS 1 Abdominal	MS 2 Endocrine
MS 1 Renal	MS 2 Infection
MS 1 Respiratory	MS 2 Neuro/Psych
MS 1 Musculoskeletal	
MS 1 Neuro #1	
MS 1 Neuro #2	

Core MS 1 &2 Courses/Sessions Dropped	
MS 1 CV Physiology	MS 2 Microbiology
MS 1 Renal Acid-Base Physiology	MS 2 Cardiovascular Physiology
MS 1 Respiratory Physiology	MS 2 Inhaled & IV Anesthetics
MS 1 Neuroscience	MS 2 Sedatives and Narcotics

Total Instructor Blocks Needed: 90
 Total number of scenarios developed: 22

ACADEMIC YEAR 2017-2018

Academic year 2017-2018 remained relatively the same. There was some movement in the courses: MS 2 GI was added, MS 1 Musculoskeletal was dropped, and MS 2 Neuro/psych was converted to just neuro by taking out the psych curriculum.

Note: This year is the first year that School of Nursing will be a utilizer

Core MS 1 &2 Courses/Sessions Added	
	MS 2 GI

Core MS 1 &2 Courses/Sessions Dropped	
MS 1 Musculoskeletal	

Total Instructor Blocks Needed: 90
 Total number of scenarios developed: 5

ACADEMIC YEAR 2018-2019

Academic year 2018-2019 remained relatively the same. Because of the addition of Dr. Wray in Clinical Foundations, there was some re-organization of the core simulation courses and the scenarios within each of those courses.

Core MS 1 &2 Courses/Sessions Added	
MS 1 Vertigo	MS 2 Fever
MS 1 Headache	MS 2 Fatigue/edema
MS 1 Flank Pain	MS 2 Chest Pain
MS 1 Cardio	MS 2 Dyspnea
	MS 2 Abdominal
	MS 2 LBP

Core MS 1 &2 Courses/Sessions Dropped	
MS 1 Neuro	MS 2 Neuro
MS 1 Renal	MS 2 Infection
MS 1 Abdominal	MS 2 Endocrine
MS 1 HTN	MS 2 GI

	MS 2 Cardio MS 2 Hematology
--	--------------------------------

Total Instructor Blocks Needed: 80
Total number of scenarios developed: unk