



# University of Iowa Health Care

*Presentation to*

**The Board of Regents, State of Iowa**

**February 22-23, 2017**

# Agenda

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Today's Presentation

Opening Remarks

Operating and Financial Performance

Strategic Plan

Faculty Presentation: Discovery and Development of  
a Neuroprotective Drug



## OPENING REMARKS

*Jean Robillard, MD*  
*Vice President for Medical Affairs*  
*& Dean, Carver College of Medicine*





# OPERATING AND FINANCIAL PERFORMANCE

*Kenneth P. Kates*

*Associate Vice President*

*& Chief Executive Officer, UI Hospitals and Clinics*

*Kenneth Fisher*

*Associate Vice President for Finance*

*& Chief Financial Officer, UI Hospitals and Clinics*

# Volume Indicators

Fiscal Year to Date January 2017

Operating Review (YTD)	Actual	Budget	Prior Year *	Variance to Budget	Variance to Budget %	Variance to Prior Year	Variance to Prior Year %
Discharges	19,878	19,956	19,318	(78)	-0.4% ○	560	2.9% ●
Patient Days	131,630	131,069	126,749	561	0.4% ○	4,881	3.9% ●
Average Daily Census	612.23	609.62	589.53	2.61	0.4% ○	22.70	3.9% ●
Total Surgeries	18,338	18,341	17,691	(3)	0.0% ○	647	3.7% ●
- Inpatient	8,724	8,708	8,648	16	0.2% ○	76	0.9% ○
- Outpatient	9,614	9,633	9,043	(19)	-0.2% ○	571	6.3% ●
ED Visits	35,138	36,088	33,828	(950)	-2.6% ●	1,310	3.9% ●
Total Clinic Visits	528,560	543,605	495,340	(15,045)	-2.8% ●	33,220	6.7% ●



Greater than 2.5% Favorable



Neutral





















Greater than 2.5% Unfavorable

\* from ongoing operations

# Discharges by Type

Fiscal Year to Date January 2017

Operating Review (YTD)	Actual	Budget	Prior Year	Variance to Budget	Variance to Budget %	Variance to Prior Year	Variance to Prior Year %
Adult Medical	5,534	5,589	5,388	(55)	-1.0% 	146	2.7% 
Adult Surgical	10,685	10,647	10,390	38	0.4% 	295	2.8% 
Adult Psych	676	751	692	(75)	-10.0% 	(16)	-2.3% 
<i>Subtotal – Adult</i>	<i>16,895</i>	<i>16,987</i>	<i>16,470</i>	<i>(92)</i>	<i>-0.5%</i> 	<i>425</i>	<i>2.6%</i> 
Pediatric Medical & Surgical	2,146	2,188	2,105	(42)	-1.9% 	41	1.9% 
Pediatric Critical Care	493	485	465	8	1.6% 	28	6.0% 
Pediatric Psych	344	296	278	48	16.2% 	66	23.7% 
<i>Subtotal – Pediatrics</i>	<i>2,983</i>	<i>2,969</i>	<i>2,848</i>	<i>14</i>	<i>0.5%</i> 	<i>135</i>	<i>4.7%</i> 
<b>TOTAL</b>	<b>19,878</b>	<b>19,956</b>	<b>19,318</b>	<b>(78)</b>	<b>-0.4%</b> 	<b>560</b>	<b>2.9%</b> 

 Greater than 2.5% Favorable
  Neutral
  Greater than 2.5% Unfavorable

# Discharge Days by Type

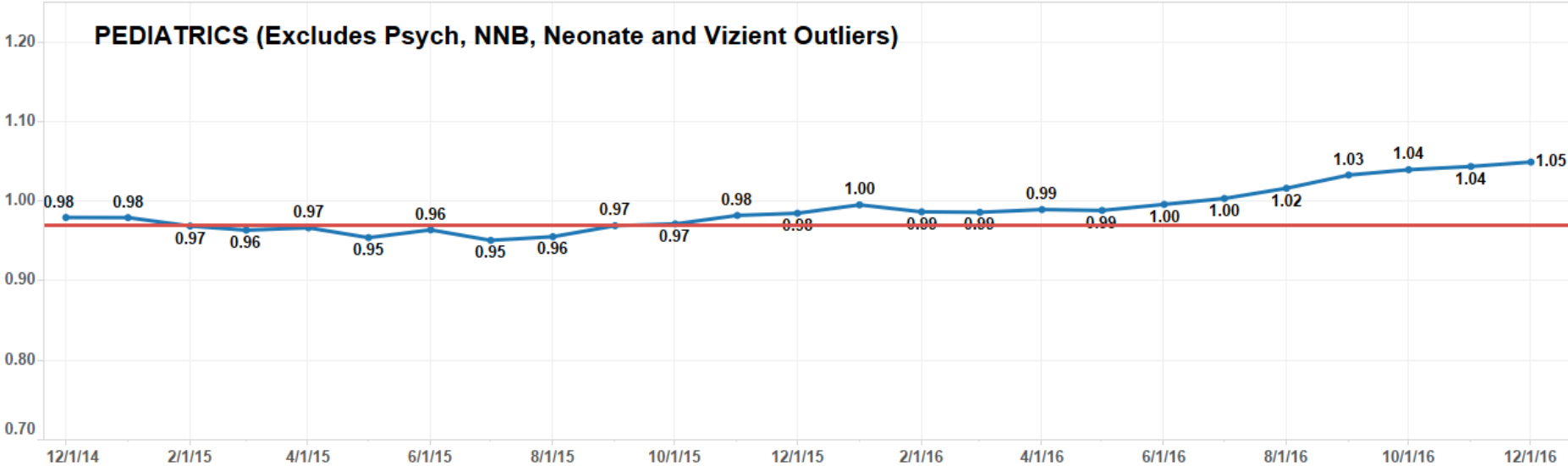
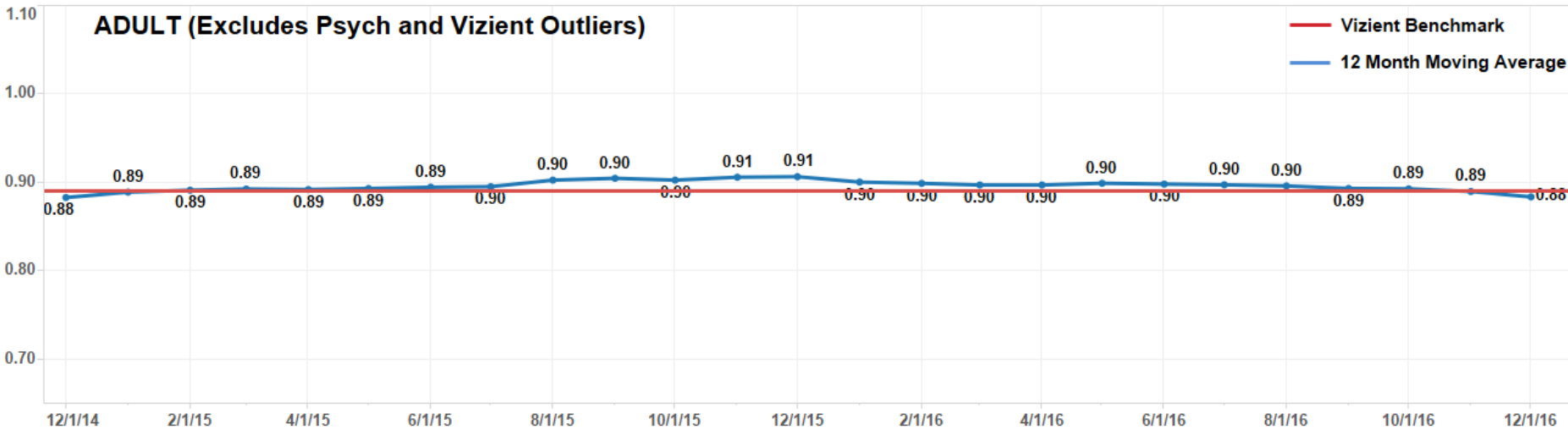
Fiscal Year to Date January 2017

Operating Review (YTD)	Actual	Budget	Prior Year	Variance to Budget	Variance to Budget %	Variance to Prior Year	Variance to Prior Year %
Adult Medical	31,469	31,699	30,990	(230)	-0.7% ○	479	1.5% ○
Adult Surgical	58,244	58,114	56,087	130	0.2% ○	2,157	3.8% ●
Adult Psych	11,118	13,372	12,687	(2,254)	-16.9% ●	(1,569)	-12.4% ●
<i>Subtotal – Adult</i>	<i>100,831</i>	<i>103,185</i>	<i>99,764</i>	<i>(2,354)</i>	<i>-2.3% ○</i>	<i>1,067</i>	<i>1.1% ○</i>
Pediatric Medical and Surgical	13,397	12,037	11,701	1,360	11.3% ●	1,696	14.5% ●
Pediatric Critical Care	15,318	13,105	12,615	2,213	16.9% ●	2,703	21.4% ●
Pediatric Psych	2,765	3,078	2,964	(313)	-10.2% ●	(199)	-6.7% ●
<i>Subtotal – Pediatrics</i>	<i>31,480</i>	<i>28,220</i>	<i>27,280</i>	<i>3,260</i>	<i>11.6% ●</i>	<i>4,200</i>	<i>15.4% ●</i>
<b>TOTAL</b>	<b>132,311</b>	<b>131,405</b>	<b>127,044</b>	<b>906</b>	<b>0.7% ○</b>	<b>5,267</b>	<b>4.1% ●</b>

 Greater than 2.5% Favorable
  Neutral
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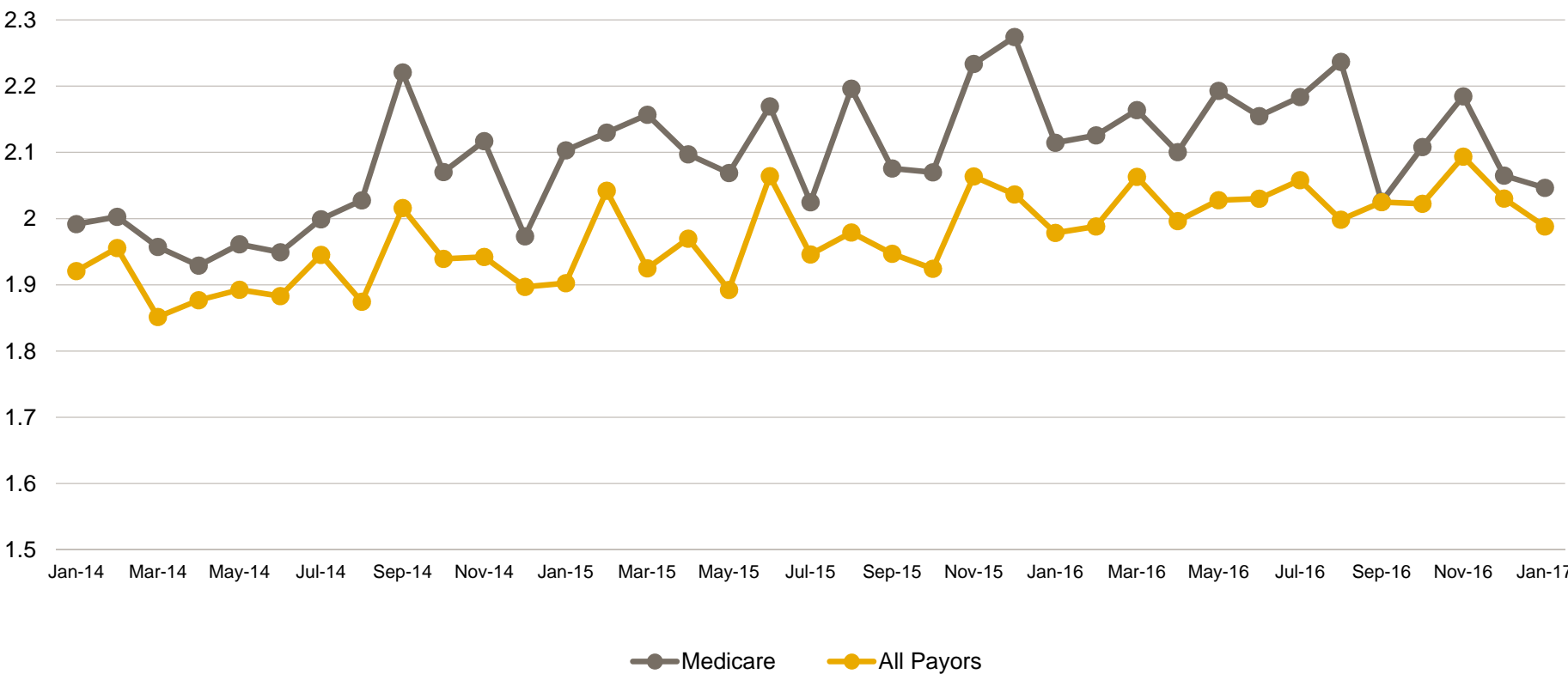
# Length of Stay

December 2016, 12 Month Moving Average





# Case Mix Index



# Inpatient Surgeries – by Clinical Department

Fiscal Year to Date January 2017

Operating Review (YTD)	Actual	Budget	Prior Year	Variance to Budget	Variance to Budget	%	Variance to Prior Year	Variance to Prior Year	%
Cardiothoracic	647	641	646	6	0.9%	○	1	0.2%	○
Dentistry	238	283	263	(45)	-15.9%	●	(25)	-9.5%	●
General Surgery	2,611	2,482	2,474	129	5.2%	●	137	5.5%	●
Gynecology	459	531	520	(72)	-13.6%	●	(61)	-11.7%	●
Neurosurgery	1,557	1,495	1,498	62	4.1%	●	59	3.9%	●
Ophthalmology	139	165	177	(26)	-15.8%	●	(38)	-21.5%	●
Orthopedics	1,965	2,050	1,998	(85)	-4.1%	●	(33)	-1.7%	○
Otolaryngology	493	470	466	23	4.9%	●	27	5.8%	●
Radiology – Interventional	59	56	62	3	5.4%	●	(3)	-4.8%	●
Urology w/ Procedure Ste.	556	535	544	21	3.9%	●	12	2.2%	○
<b>Total</b>	<b>8,724</b>	<b>8,708</b>	<b>8,648</b>	<b>16</b>	<b>0.2%</b>	○	<b>76</b>	<b>0.9%</b>	○
Solid Organ Transplants	194	191	169	3	1.6%	○	25	14.8%	●

 Greater than 2.5% Favorable
  Neutral
  Greater than 2.5% Unfavorable

# Outpatient Surgeries – by Clinical Department









Fiscal Year to Date January 2017

Operating Review (YTD)	Actual	Budget	Prior Year	Variance to Budget	Variance to Budget	%	Variance to Prior Year	Variance to Prior Year	%
Cardiothoracic	35	23	24	12	52.2%	●	11	45.8%	●
Dentistry	316	323	300	(7)	-2.2%	○	16	5.3%	●
Dermatology	22	20	22	2	10.0%	●	0	0.0%	○
General Surgery	1,418	1,510	1,454	(92)	-6.1%	●	(36)	-2.5%	○
Gynecology	565	519	457	46	8.9%	●	108	23.6%	●
Internal Medicine	2	8	8	(6)	-75.0%	●	(6)	-75.0%	●
Neurosurgery	358	354	347	4	1.1%	○	11	3.2%	●
Ophthalmology	2,055	2,177	1,988	(122)	-5.6%	●	67	3.4%	●
Orthopedics	2,149	2,050	1,975	99	4.8%	●	174	8.8%	●
Otolaryngology	1,460	1,419	1,304	41	2.9%	●	156	12.0%	●
Pediatrics	6	1	1	5	500.0%	●	5	500.0%	●
Radiology – Interventional	4	19	31	(15)	-78.9%	●	(27)	-87.1%	●
Urology w/ Procedure Ste.	1,224	1,210	1,132	14	1.2%	○	92	8.1%	●
<b>Total</b>	<b>9,614</b>	<b>9,633</b>	<b>9,043</b>	<b>(19)</b>	<b>-0.2%</b>	○	<b>571</b>	<b>6.3%</b>	●

 Greater than 2.5% Favorable
  Neutral
  Greater than 2.5% Unfavorable

# Emergency Department

Fiscal Year to Date January 2017

Operating Review (YTD)	Actual	Budget	Prior Year	Variance to Budget	Variance to Budget <sup>%</sup>	Variance to Prior Year	Variance to Prior Year <sup>%</sup>
ED Visits	35,138	36,088	33,828	(950)	-2.6% 	1,310	3.9% 
ED Admits	11,628	11,741	11,198	(113)	-1.0% 	430	3.8% 
ED Conversion Factor	33.1%	32.5%	33.1%		1.9% 		0.0% 
ED Admits / Total Admits	58.8%	59.0%	58.4%		-0.3% 		0.7% 

 Greater than 2.5% Favorable
  Neutral
  Greater than 2.5% Unfavorable

# Total Clinic Visits by Location

Fiscal Year to Date January 2017

Operating Review (YTD)	FY17 ACTUAL				FY16 ACTUAL*				Variance to Prior Year	%	
	On-Site	IRL	UICMS & QuickCare	Total	On-Site	IRL	UICMS & QuickCare	Total			
FAMILY MEDICINE	24,562	7,111	81,359	113,032	27,200		73,334	100,534	12,498	12.4%	●
GENERAL INTERNAL MEDICINE		16,210		16,210		16,280		16,280	(70)	-0.4%	○
PEDIATRICS		13,035		13,035		12,932		12,932	103	0.8%	○
<i>SUBTOTAL: PRIMARY CARE</i>	<i>24,562</i>	<i>36,356</i>	<i>81,359</i>	<i>142,277</i>	<i>27,200</i>	<i>29,212</i>	<i>73,334</i>	<i>129,746</i>	<i>12,531</i>	<i>9.7%</i>	●
ANESTHESIA	3,954	182		4,136					4,136	100.0%	●
CTR DISABILITIES & DEVELOPMENT	6,015			6,015	5,548			5,548	467	8.4%	●
CTR FOR DIGESTIVE DISEASES	12,119	3,009		15,128	12,778	2,403		15,181	(53)	-0.3%	○
CLINICAL CANCER CENTER	31,706	1,435		33,141	32,510	1,040		33,550	(409)	-1.2%	○
DERMATOLOGY	13,360	5,813		19,173	14,019	5,575		19,594	(421)	-2.1%	○
GENERAL SURGERY	13,465			13,465	12,383			12,383	1,082	8.7%	●
HOSPITAL DENTISTRY	10,372			10,372	9,838			9,838	534	5.4%	●
INTERNAL MEDICINE	18,229	4,906		23,135	17,446	4,631		22,077	1,058	4.8%	●
NEUROLOGY	9,596			9,596	8,972			8,972	624	7.0%	●
NEUROSURGERY	7,995			7,995	7,600			7,600	395	5.2%	●
OBSTETRICS/GYNECOLOGY	35,412	13,394		48,806	34,137	14,502		48,639	167	0.3%	○
OPHTHALMOLOGY	37,062	6,006		43,068	36,440	5,483		41,923	1,145	2.7%	●
ORTHOPEDICS	41,794	1,441		43,235	40,774	428		41,202	2,033	4.9%	●
OTOLARYNGOLOGY	11,533	4,305		15,838	11,455	3,482		14,937	901	6.0%	●
PEDIATRICS	36,653	1,827		38,480	34,055	647		34,702	3,778	10.9%	●
PSYCHIATRY	24,260	19		24,279	21,070			21,070	3,209	15.2%	●
UROLOGY	4,788	7,571		12,359	3,825	6,549		10,374	1,985	19.1%	●
UI HEART CTR	10,895	7,167		18,062	10,903	7,101		18,004	58	0.3%	○
<i>SUBTOTAL: SPECIALTY CARE</i>	<i>329,208</i>	<i>57,075</i>		<i>386,283</i>	<i>313,753</i>	<i>51,841</i>		<i>365,594</i>	<i>20,689</i>	<i>5.7%</i>	●
<b>TOTAL</b>	<b>353,770</b>	<b>93,431</b>	<b>81,359</b>	<b>528,560</b>	<b>340,953</b>	<b>81,053</b>	<b>73,334</b>	<b>495,340</b>	<b>33,220</b>	<b>6.7%</b>	●

Greater than 2.5% Favorable

Neutral

Greater than 2.5% Unfavorable

\* from ongoing operations

# Pediatric Clinic Visits by Location

Fiscal Year to Date January 2017

Operating Review (YTD)	FY17 ACTUAL				FY16 ACTUAL*				Variance to Prior Year	%	
	On-Site	IRL	UICMS & QuickCare	Total	On-Site	IRL	UICMS & QuickCare	Total			
FAMILY MEDICINE	2,604	238	20,889	23,731	2,511		20,481	22,992	739	3.2%	●
GENERAL INTERNAL MEDICINE		12		12		9		9	3	33.3%	●
PEDIATRICS		12,744		12,744		12,573		12,573	171	1.4%	○
<i>SUBTOTAL: PRIMARY CARE</i>	<i>2,604</i>	<i>12,994</i>	<i>20,889</i>	<i>36,487</i>	<i>2,511</i>	<i>12,582</i>	<i>20,481</i>	<i>35,574</i>	<i>913</i>	<i>2.6%</i>	●
ANESTHESIA										0.0%	○
CTR DISABILITIES & DEVELOPMENT	6,015			6,015	5,548			5,548	467	8.4%	●
CTR FOR DIGESTIVE DISEASES	8	1		9	8			8	1	12.5%	●
CLINICAL CANCER CENTER	81			81	52			52	29	55.8%	●
DERMATOLOGY	931	1,181		2,112	1,206	1,225		2,431	(319)	-13.1%	●
GENERAL SURGERY	431			431	321			321	110	34.3%	●
HOSPITAL DENTISTRY	1,333			1,333	1,258			1,258	75	6.0%	●
INTERNAL MEDICINE	69	153		222	56	90		146	76	52.1%	●
NEUROLOGY	294			294	266			266	28	10.5%	●
NEUROSURGERY	1,300			1,300	1,218			1,218	82	6.7%	●
OBSTETRICS/GYNECOLOGY	350	90		440	418	68		486	(46)	-9.5%	●
OPHTHALMOLOGY	6,309	405		6,714	6,010	300		6,310	404	6.4%	●
ORTHOPEDICS	7,463	50		7,513	6,953	5		6,958	555	8.0%	●
OTOLARYNGOLOGY	2,125	2,649		4,774	1,849	2,153		4,002	772	19.3%	●
PEDIATRICS	31,804	1,607		33,411	29,686	603		30,289	3,122	10.3%	●
PSYCHIATRY	6,511			6,511	5,382			5,382	1,129	21.0%	●
UROLOGY	122	1,568		1,690	126	1,718		1,844	(154)	-8.4%	●
UI HEART CTR	14	225		239	89	113		202	37	18.3%	●
<i>SUBTOTAL: SPECIALTY CARE</i>	<i>65,160</i>	<i>7,929</i>	<i>0</i>	<i>73,089</i>	<i>60,446</i>	<i>6,275</i>	<i>0</i>	<i>66,721</i>	<i>6,368</i>	<i>9.5%</i>	●
<b>TOTAL</b>	<b>67,764</b>	<b>20,923</b>	<b>20,889</b>	<b>109,576</b>	<b>62,957</b>	<b>18,857</b>	<b>20,481</b>	<b>102,295</b>	<b>7,281</b>	<b>7.1%</b>	●

Greater than 2.5% Favorable

Neutral

Greater than 2.5% Unfavorable

\* from ongoing operations



# Adult Clinic Visits by Location

Fiscal Year to Date January 2017

Operating Review (YTD)	FY17 ACTUAL				FY16 ACTUAL*				Variance to Prior Year	%	
	On-Site	UICMS & IRL	QuickCare	Total	On-Site	UICMS & IRL	QuickCare	Total			
FAMILY MEDICINE	21,958	6,873	60,470	89,301	24,689		52,853	77,542	11,759	15.2%	●
GENERAL INTERNAL MEDICINE		16,198		16,198		16,271		16,271	(73)	-0.4%	○
PEDIATRICS		291		291		359		359	(68)	-18.9%	●
<i>SUBTOTAL: PRIMARY CARE</i>	<i>21,958</i>	<i>23,362</i>	<i>60,470</i>	<i>105,790</i>	<i>24,689</i>	<i>16,630</i>	<i>52,853</i>	<i>94,172</i>	<i>11,618</i>	<i>12.3%</i>	●
ANESTHESIA	3,954	182		4,136					4,136	100.0%	●
CTR FOR DIGESTIVE DISEASES	12,111	3,008		15,119	12,770	2,403		15,173	(54)	-0.4%	○
CLINICAL CANCER CENTER	31,625	1,435		33,060	32,458	1,040		33,498	(438)	-1.3%	○
DERMATOLOGY	12,429	4,632		17,061	12,813	4,350		17,163	(102)	-0.6%	○
GENERAL SURGERY	13,034			13,034	12,062			12,062	972	8.1%	●
HOSPITAL DENTISTRY	9,039			9,039	8,580			8,580	459	5.3%	●
INTERNAL MEDICINE	18,160	4,753		22,913	17,390	4,541		21,931	982	4.5%	●
NEUROLOGY	9,302			9,302	8,706			8,706	596	6.8%	●
NEUROSURGERY	6,695			6,695	6,382			6,382	313	4.9%	●
OBSTETRICS/GYNECOLOGY	35,062	13,304		48,366	33,719	14,434		48,153	213	0.4%	○
OPHTHALMOLOGY	30,753	5,601		36,354	30,430	5,183		35,613	741	2.1%	○
ORTHOPEDICS	34,331	1,391		35,722	33,821	423		34,244	1,478	4.3%	●
OTOLARYNGOLOGY	9,408	1,656		11,064	9,606	1,329		10,935	129	1.2%	○
PEDIATRICS	4,849	220		5,069	4,369	44		4,413	656	14.9%	●
PSYCHIATRY	17,749	19		17,768	15,688			15,688	2,080	13.3%	●
UROLOGY	4,666	6,003		10,669	3,699	4,831		8,530	2,139	25.1%	●
UI HEART CTR	10,881	6,942		17,823	10,814	6,988		17,802	21	0.1%	○
<i>SUBTOTAL: SPECIALTY CARE</i>	<i>264,048</i>	<i>49,146</i>		<i>313,194</i>	<i>253,307</i>	<i>45,566</i>		<i>298,873</i>	<i>14,321</i>	<i>4.8%</i>	●
<b>TOTAL</b>	<b>286,006</b>	<b>72,508</b>	<b>60,470</b>	<b>418,984</b>	<b>277,996</b>	<b>62,196</b>	<b>52,853</b>	<b>393,045</b>	<b>25,939</b>	<b>6.6%</b>	●

Greater than 2.5% Favorable

Neutral

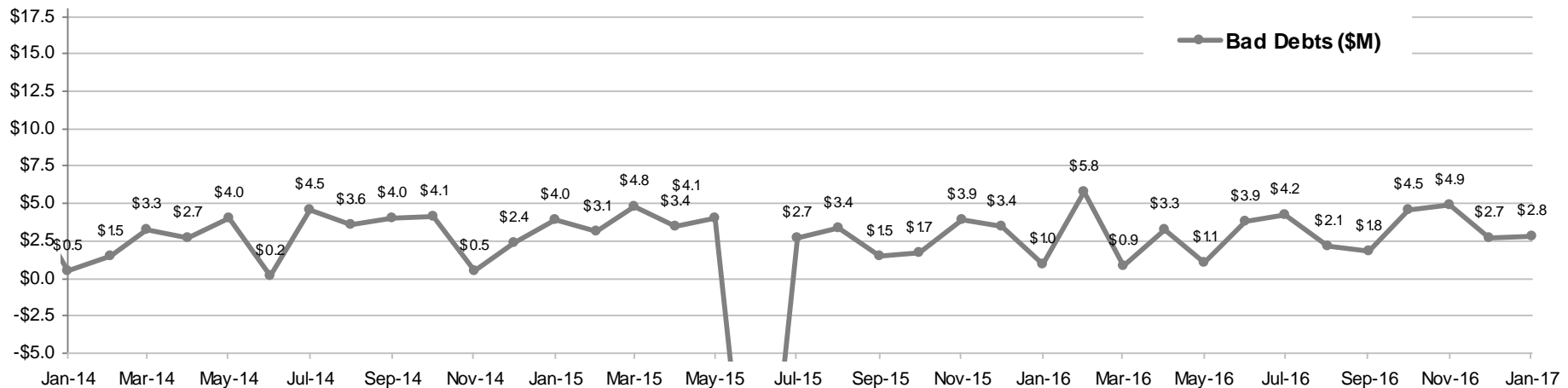
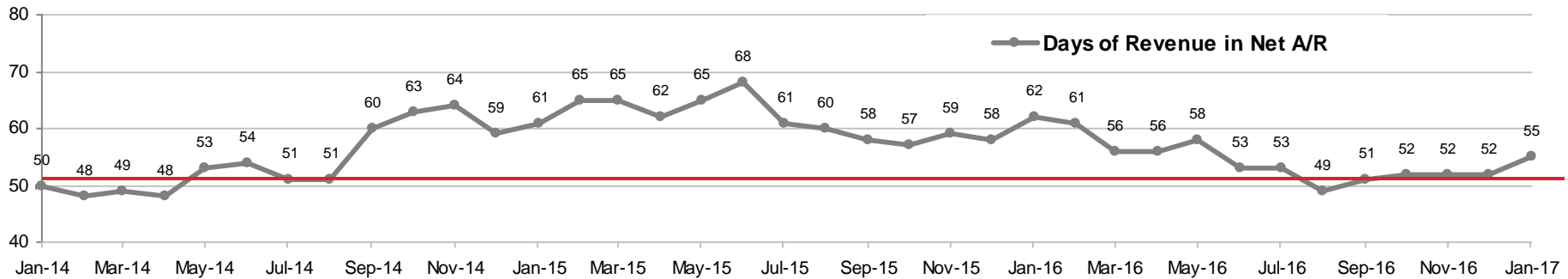
Greater than 2.5% Unfavorable

\* from ongoing operations

# Comparative Accounts Receivable

At January 31, 2017

	June 30, 2015	June 30, 2016	January 31, 2017
Net Accounts Receivable	\$236,775,239	\$210,723,995	\$219,063,071
Net Days in AR	68	53	55



# Comparative Financial Results

Fiscal Year to Date January 2017, Dollars in Thousands

NET REVENUES	Actual	Budget	Prior Year	Variance to Budget	% Variance to Budget	Variance to Prior Year	% Variance to Prior Year
Patient Revenue	\$839,136	\$878,368	\$797,145	(\$39,232)	-4.5%	\$41,991	5.3%
Other Operating Revenue	29,253	26,814	30,383	2,439	9.1%	(1,130)	-3.7%
<b>Total Revenue</b>	<b>\$868,389</b>	<b>\$905,182</b>	<b>\$827,528</b>	<b>(\$36,793)</b>	<b>-4.1%</b>	<b>\$40,861</b>	<b>4.9%</b>
<b>EXPENSES</b>							
Salaries and Wages	\$422,398	\$438,822	\$379,654	(\$16,424)	-3.7%	\$42,744	11.3%
General Expenses	371,772	384,555	345,172	(12,783)	-3.3%	26,600	7.7%
Operating Expense before Capital	\$794,170	\$823,377	\$724,826	(\$29,207)	-3.5%	\$69,344	9.6%
<b>Cash Flow Operating Margin</b>	<b>\$74,219</b>	<b>\$81,805</b>	<b>\$102,702</b>	<b>(\$7,586)</b>	<b>-9.3%</b>	<b>(\$28,483)</b>	<b>-27.7%</b>
Capital- Depreciation and Amortization	47,869	50,169	44,739	(2,300)	-4.6%	3,130	7.0%
<b>Total Operating Expense</b>	<b>\$842,039</b>	<b>\$873,546</b>	<b>\$769,565</b>	<b>(\$31,507)</b>	<b>-3.6%</b>	<b>\$72,474</b>	<b>9.4%</b>
<b>Operating Income</b>	<b>\$26,350</b>	<b>\$31,636</b>	<b>\$57,963</b>	<b>(\$5,286)</b>	<b>-16.7%</b>	<b>(\$31,613)</b>	<b>-54.5%</b>
<b>Operating Margin %</b>	<b>3.0%</b>	<b>3.5%</b>	<b>7.0%</b>		<b>-0.5%</b>		<b>-4.0%</b>
Gain (Loss) on Investments	2,490	4,711	(14,118)	(2,221)	-47.1%	16,608	117.6%
Other Non-Operating	(3,406)	(7,723)	(4,396)	4,317	55.9%	990	22.5%
<b>Net Income</b>	<b>\$25,434</b>	<b>\$28,624</b>	<b>\$39,449</b>	<b>(\$3,190)</b>	<b>-11.1%</b>	<b>(\$14,015)</b>	<b>-35.5%</b>
<b>Net Margin %</b>	<b>2.9%</b>	<b>3.2%</b>	<b>4.9%</b>		<b>-0.3%</b>		<b>-2.0%</b>

\* Gain/(Loss) on Investments based on information available at close. Final investment return for this period is reflected in Fiscal Year to Date returns in the subsequent reporting cycle.



# UI HEALTH CARE INTEGRATED STRATEGIC PLAN

*Jean Robillard, MD*  
*Vice President for Medical Affairs*  
*& Dean, Carver College of Medicine*

# UI Health Care Strategic Plan—FY2014-2016

World Class People. World Class Medicine.

Clinical Quality & Service Goal	Research Goal	Education Goal	People Goal	Diversity Goal	Growth and Finance Goal
Provide world class healthcare and service to optimize health for the people of Iowa and beyond.	Advance world class discovery through outstanding, innovative biomedical and health services research.	Develop world class health professionals and scientists through excellent, innovative and humanistic educational curricula for learners at every stage.	Foster a culture of excellence that values, engages and enables our workforce.	Create an environment of inclusion where individual differences are respected and all feel welcome.	Optimize a performance-driven business model that assures financial success.
Accountable Leaders	Accountable Leaders	Accountable Leaders	Accountable Leaders	Accountable Leaders	Accountable Leaders
Ken Kates, Theresa Brennan, Kenneth Rempher, Scott Turner, Sabi Singh, Doug Van Daele	Pat Winokur, Gary Rosenthal Sharon Tucker	Donna Hammond, Mark Wilson, Christopher Cooper, LouAnn Montgomery	Jana Wessels, Kenneth Rempher	Sherree Wilson & Jean Robillard (VPMA Cabinet)	Ken Fisher, Ken Kates, Sabi Singh, Scott Turner
Strategies & Tactics	Strategies & Tactics	Strategies & Tactics	Strategies & Tactics	Strategies & Tactics	Strategies & Tactics
<p>Q81. Optimize patient safety</p> <p>Q82. Ensure accurate and complete coding of documentation</p> <p>Q83. Improve timely access to care</p> <p>Q84. Deliver consistent service excellence</p> <p>Q85. Design and implement innovative care models</p> <p>Q86. Lead efforts to improve health, safety, and reduce fragmentation in the health care delivery system in collaboration with UI Health Alliance and other community partners</p> <p>Q87. Build and sustain programmatic priorities:</p> <ul style="list-style-type: none"> <li>Cancer</li> <li>Children's Services</li> <li>Diabetes</li> <li>Heart and Vascular</li> <li>Neurosciences</li> <li>Primary Care</li> <li>Orthopedics</li> <li>Transplant</li> <li>Women's Health</li> </ul> <p>Q88. Optimize UH operational effectiveness locally with UHMC and across the Alliance</p>	<p>R1. Recruit, develop, and retain a diverse cadre of world-class investigators and support their academic development</p> <p>R2. Identify areas of excellence in basic research in which to prioritize future growth and development (neuroscience, diabetes, cardiovascular, genomics)</p> <p>R3. Expand existing research that disseminates and implements evidence-based practices into routine clinical practice settings and across UI Health Alliance</p> <p>R4. Integrate genomics with clinical care</p> <p>R5. Improve and grow scientific infrastructure including new cores</p> <p>R6. Nurture the development of high quality, high reward interdisciplinary scientific programs, especially those with potential for tech transfer and/or start-up companies</p> <p>R7. Strengthen information capabilities for all research areas</p> <p>R8. Collaborate with other UI Colleges and CTSA Consortium and UI Health Alliance in targeted areas to meet common goals</p> <p>R9. Strengthen enterprise research business model</p>	<p>E1. Complete roll-out of new innovative mechanism-based UIHC curriculum</p> <p>E2. Recruit, develop and retain diverse world class faculty, fellows, residents and students</p> <p>E3. Foster innovation through greater integration across the continuum of UIHC, OHSU, OHSU, and OHSU</p> <p>E4. Limit medical student debt</p> <p>E5. Recognize and reward excellence in teaching; find creative ways to fund teaching</p> <p>E6. Cultivate critical thinking, an environment of quality and life-long learning a spirit of inquiry, and a passion for excellence</p> <p>E7. Emphasize interprofessional education (IPE) across all health science professionals to improve patient care</p> <p>E8. Deepen academic training for clinicians through creative faculty/fellowships</p>	<p>P1. Continue to develop talent within the organization and define performance expectations for all</p> <p>P2. Seek, hire and retain outstanding people including individuals from groups traditionally under-represented in academic medicine</p> <p>P3. Ensure that all UI Health Care employees receive appropriate training regarding organization's Mission, Vision, Values and Goals</p> <p>P4. Engage staff and encourage strong personal responsibility, accountability and empowerment directed toward achieving organizational goals</p> <p>P5. Promote programs that recognize and reward excellence</p> <p>P6. Foster an environment of lifelong learning, innovation and collaboration</p> <p>P7. Maintain Magnet recognition program designation to attract and retain a world class workforce</p> <p>P8. Develop and implement the IOM Future of Nursing recommendations appropriate to our workforce</p> <p>P9. Continue to develop infrastructure, technology and lean processes to support our efforts</p> <p>P10. Support organizational capacity to transform and embrace change</p>	<p>D1. Foster a positive and welcoming environment by nurturing a culture of respect, inclusion and equal opportunity</p> <p>D2. Develop and implement 2014-2017 OOH Strategic Diversity Plan</p> <p>D3. Provide a range of diversity education, cultural enrichment and assimilation programs for members of the UI Health Care community</p> <p>D4. Develop and implement innovative, effective recruiting and pipeline initiatives geared towards under-represented groups</p> <p>D5. Prepare to achieve compliance with LCHIE standards (HHS, HHS, EO-21, EO-12816) related to diversity, inclusion and culturally responsive care for 2017 review</p> <p>D6. Each Accountable Leader will advance diversity in all strategies</p>	<p>GF1. Complete evaluation of clinical programs based on all three missions and seek to grow, expand, growth or marginal</p> <p>GF2. Develop and implement business model for long term growth of targeted clinical programs</p> <p>GF3. Develop and implement business models to support the evolving healthcare delivery system, including ACO's, risk sharing, gain sharing or bundled payments</p> <p>GF4. Maintain solid plan to address core strategies</p> <p>GF5. Develop and implement strategies to strengthen relationships with Critical Access Hospitals, their physicians and other key community providers and work collaboratively to improve health and lower costs for populations living in these communities</p> <p>GF6. Develop a culture of philanthropy within UI Health Care</p> <p>GF7. Increase number of lives in ACO products</p> <p>GF8. Increase Pediatric market share population in advance of Children's Hospital opening in targeted regions</p>
Information Technology	Information Technology	Information Technology	Information Technology	Information Technology	Information Technology
<ul style="list-style-type: none"> <li>Continue to develop the full capabilities of Epic to facilitate quality safety and enhance professional and consumer relationships, including UI Central and UI Central</li> <li>Mobile technology</li> <li>Enhance sharing of clinical information with external providers</li> <li>Data warehousing capabilities incorporating external data</li> <li>Device integration into Epic</li> </ul>	<ul style="list-style-type: none"> <li>Develop the full capabilities of Epic to facilitate innovation in research</li> <li>Develop IT infrastructure necessary for COBRE/IT-EPACross UI Health Alliance, business metrics, clinical outcomes, decision science, genomics, and comparative effectiveness</li> <li>Develop robust information infrastructure in synergy with university initiatives</li> </ul>	<ul style="list-style-type: none"> <li>Develop the full capabilities of Epic to facilitate education</li> <li>Provide training and support for faculty to understand and implement patient-centered care for faculty to implement new teaching methods (availability of short podcasts from across the world, IT based teaching, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>Training and development</li> <li>Communications</li> <li>Policy and practice changes</li> <li>Compliance tracking</li> </ul>	<ul style="list-style-type: none"> <li>Web-based tools (self-audit, reporting programs on diversity initiatives, cultural competency resources, accreditation, etc.)</li> <li>Evaluate online tools/programs to facilitate cultural competency training and adopt one</li> <li>Track participation in diversity programs</li> </ul>	<ul style="list-style-type: none"> <li>Data-driven business planning</li> <li>Robust finance and performance-reporting systems</li> <li>Data warehouse and analytics capabilities for ACOs and population health</li> </ul>
Metrics	Metrics	Metrics	Metrics	Metrics	Metrics
<p>Q81</p> <ul style="list-style-type: none"> <li>UIHC Reasonable Events</li> <li>Adverse Drug Events</li> <li>UIHC, CAUTI, VAP &amp; D-Off Rates</li> <li>UIHC Core Measures</li> <li>Voluntary Index</li> <li>Readmission Rate</li> <li>Brand Management</li> <li>Nurse Satisfaction Indicators</li> </ul> <p>Q82</p> <ul style="list-style-type: none"> <li>Care-Weighted Documentation Opportunity Points (CareWIP)</li> <li>ICD-10 Provider Training Completion</li> </ul> <p>Q83</p> <ul style="list-style-type: none"> <li>Clinic room utilization</li> <li>Transfer Center – Average Placement Time</li> <li>Percent of transfers coming through transfer center</li> <li>Length of stay</li> <li>Bank day access</li> <li>Prescribed drug costs (Net OR)</li> <li>% of total prescriptions filled by UIHC retail pharmacies</li> </ul> <p>Q84</p> <ul style="list-style-type: none"> <li>Patient satisfaction (Likelihood to Recommend)</li> <li>Staff satisfaction</li> <li>Referring physician satisfaction</li> <li>MyChart utilization</li> <li>Urgency Use (Stage 2)</li> </ul> <p>Q85</p> <ul style="list-style-type: none"> <li>NCCA Medical Home certification</li> <li>Health implemented in Critical Access Hospitals</li> </ul> <p>Q86</p> <ul style="list-style-type: none"> <li>Quality and cost targets for Medicare, Medicaid and Veterans ACOs</li> <li>Clinical integration across the Alliance</li> <li>UI Central/In at Alliance and UI Health Network offices</li> <li># of UIHC projects implemented within UI Health Care &amp; UI Health Alliance</li> </ul> <p>Q87</p> <ul style="list-style-type: none"> <li>Volume, growth, outcomes and patient satisfaction indicators</li> </ul> <p>Q88</p> <ul style="list-style-type: none"> <li>New structure and leadership in place</li> </ul>	<p>R1</p> <ul style="list-style-type: none"> <li>Recruitment and retention of a diverse faculty as measured by annual demographic data on the composition of UI Health Care faculty</li> <li>Increase in faculty research funding for the diversity recruitment and retention plan or UIHC grant review</li> </ul> <p>R2</p> <ul style="list-style-type: none"> <li>Percentage of NIH funded research effort directed toward stated research and clinical priorities/centers of excellence</li> </ul> <p>R3</p> <ul style="list-style-type: none"> <li># of grants funding translational research</li> <li>Initial &amp; Staff COBRE</li> <li>Number and dollar amount of clinical trials</li> </ul> <p>R4</p> <ul style="list-style-type: none"> <li>Statistical process management system</li> </ul> <p>R5</p> <ul style="list-style-type: none"> <li>Complete Precision Biomedical Discovery Building and occupy with strategic initiatives as part of the Precision Biomedical Institute</li> <li>New core initiated</li> <li># of cores endorsed</li> </ul> <p>R6</p> <ul style="list-style-type: none"> <li>Number of patents, royalties, licensing agreements</li> <li>Number of new start-ups</li> </ul> <p>R7</p> <ul style="list-style-type: none"> <li>Increased participation in informatics education efforts at UIHC, OHSU and faculty level</li> <li>Initial post degree programs and faculty fellowship in informatics</li> </ul> <p>R8</p> <ul style="list-style-type: none"> <li>Number and dollar amount of program project and other collaborative grants</li> </ul> <p>R9</p> <ul style="list-style-type: none"> <li>Number, dollar amount and percent of extramurally funded projects</li> <li>Research revenue per net square foot</li> <li>Percent of faculty salaries offset by grant support</li> </ul>	<p>E1</p> <ul style="list-style-type: none"> <li>UIHCUS scores</li> <li>Placements of graduates, short term and long term</li> <li>National rankings of graduate programs and professional schools</li> <li>Scholarship (e.g. publications, national presentations) regarding innovations in clinical learning environments &amp; or in UIHCUS</li> </ul> <p>E2</p> <ul style="list-style-type: none"> <li># of hours/faculty devoted to education efforts as logged in participation database</li> <li>Applications, admissions, and yield including increased GPA and MCAT scores and diversity of applicants and admitted students</li> <li>% of UIHCUS at UIHC tied with top high quality residents</li> <li>% of UIHCUS students' success</li> <li>Success in student diversity retention initiatives</li> <li>Effectiveness of under-represented minority student scholarship program to participate in UIHC experiences</li> <li>Increase in positive data from OHSU-commissioned minority focus groups</li> </ul> <p>E3</p> <ul style="list-style-type: none"> <li>Scholarship (e.g. publications, national presentations) regarding innovations in clinical learning environments &amp; or in UIHCUS</li> <li>% of UIHCUS at UIHC tied with top high quality residents</li> <li>Success in student diversity retention initiatives</li> <li>Effectiveness of under-represented minority student scholarship program to participate in UIHC experiences</li> <li>Increase in positive data from OHSU-commissioned minority focus groups</li> </ul> <p>E4</p> <ul style="list-style-type: none"> <li>Annual student debt compared to national benchmarks and prior year</li> </ul> <p>E5</p> <ul style="list-style-type: none"> <li>UIHCUS scores</li> <li>% of UIHCUS at UIHC tied with top high quality residents</li> <li>Success in student diversity retention initiatives</li> <li>Effectiveness of under-represented minority student scholarship program to participate in UIHC experiences</li> <li>Increase in positive data from OHSU-commissioned minority focus groups</li> </ul> <p>E6</p> <ul style="list-style-type: none"> <li>Progress with effort to build infrastructure to support comprehensive physician professional development initiatives</li> <li># of endorsed professors for residency Program Directors</li> </ul> <p>E7</p> <ul style="list-style-type: none"> <li>% of UIHCUS at UIHC tied with top high quality residents</li> <li>Success in student diversity retention initiatives</li> <li>Effectiveness of under-represented minority student scholarship program to participate in UIHC experiences</li> <li>Increase in positive data from OHSU-commissioned minority focus groups</li> </ul> <p>E8</p> <ul style="list-style-type: none"> <li>Best-practice examples of IPE in clinical settings that reinforce IPE</li> <li>Verification of proficiency of resident/fellow/faculty physicians to perform</li> </ul>	<p>P1</p> <ul style="list-style-type: none"> <li>% performance objectives completed</li> </ul> <p>P2 &amp; P3</p> <ul style="list-style-type: none"> <li>Time to hire</li> </ul> <p>P4</p> <ul style="list-style-type: none"> <li>% staff completing orientation within 90 days of hire</li> <li>% staff trained in Service Excellence</li> </ul> <p>P5</p> <ul style="list-style-type: none"> <li>Hours worked vs. hours paid</li> </ul> <p>P6</p> <ul style="list-style-type: none"> <li># of workers completing Continuum program and deployed to existing or new initiatives</li> </ul> <p>P7</p> <ul style="list-style-type: none"> <li>Magnet status maintained</li> </ul> <p>P8</p> <ul style="list-style-type: none"> <li># staff involved in RN to BSN and other tuition support programs</li> </ul> <p>P9</p> <ul style="list-style-type: none"> <li>Compliance tracking system developed and implemented</li> </ul>	<p>D1</p> <ul style="list-style-type: none"> <li>2012 climate survey for UIO students completed and reported</li> <li>Enterprise-wide self-audit tool completed</li> <li>Data from focus groups collected and reported in aggregate format</li> <li>Evaluation of Human Rights Index completed, and results used to guide future direction</li> </ul> <p>D2</p> <ul style="list-style-type: none"> <li>On-line diversity reporting tool "live" and in use by all departments</li> </ul> <p>D3</p> <ul style="list-style-type: none"> <li>% medical educators possessing skills and knowledge to infuse culture competence in the curriculum and teaching methods</li> <li>Evaluation of Human Rights Index completed, and results used to guide future direction</li> </ul> <p>D4</p> <ul style="list-style-type: none"> <li>% of high participant satisfaction with, and effective of, sessions and content of the Culturally Responsive Healthcare in Iowa conference</li> </ul> <p>D5</p> <ul style="list-style-type: none"> <li>Diversity among UIO applicants and matriculants</li> <li>Applicants from historically underrepresented populations to Biomedical Research graduate programs</li> </ul> <p>D6</p> <ul style="list-style-type: none"> <li>Full compliance with LCHIE diversity, inclusion and cultural competence standards</li> </ul>	<p>GF1</p> <ul style="list-style-type: none"> <li>Recruitment timing</li> </ul> <p>GF2</p> <ul style="list-style-type: none"> <li>Operating margin established for each business unit</li> <li>Flexible budget variance of less than 2.0% for each business unit</li> <li>Volume metrics for each business unit including at least 10 most important admissions, discharges, ALOS, etc. (excludes as an index), surgical cases, ambulatory visits for each budget year</li> <li>Quality of service metrics including room turns for clinics, wait time for new patients in clinics, others (TTC) for each budget year</li> <li>GAFT productivity for each clinical department</li> </ul> <p>GF3</p> <ul style="list-style-type: none"> <li>Bond rating metrics, days cash on hand, operating margin, current ratio, debt to capital, others (TTC) to maintain current rating from each agency</li> <li>Long-range business model updated yearly</li> <li>Bonded savings for ACO programs</li> </ul> <p>GF4</p> <ul style="list-style-type: none"> <li>Facility projects on budget and schedule</li> </ul> <p>GF5</p> <ul style="list-style-type: none"> <li>UI Health network implemented with targeted services in targeted areas</li> </ul> <p>GF6</p> <ul style="list-style-type: none"> <li>Philanthropic dollars received</li> <li>% UI Health Care faculty/staff who give to UI</li> </ul> <p>GF7</p> <ul style="list-style-type: none"> <li>% out of state migration for tertiary care</li> <li>% market share of tertiary care in state</li> </ul>



# A New Approach for 2017-2020

Strategic Planning: The Future(s) of UI Health Care

Develop a refreshed integrated strategic plan using a two-pronged approach

- Scenario Planning
- Strategic Planning

Targeted interviews, workshops and planning meetings involving a broad cross-section of internal and external stakeholders

Key improvements sought in new plan

- Better linkage to budget and resource needs
- More clearly established timeline and sequencing of major strategies
- Stronger execution of the plan
- Project Manager assigned to oversee smooth implementation





# By the Numbers

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Strategic Planning: The Future(s) of UI Health Care



100+

UI Health Care faculty,  
staff, and students involved  
in the development of the  
strategic plan



200+

Driving forces of change in  
health care identified



80+

Stakeholder interviews held

# Project Overview

Strategic Planning: The Future(s) of UI Health Care

*Objective: to explore alternative futures for health care, 2016-2026 in order to inform UI Health Care strategic planning.*

**Trends and uncertainties** that will shape the future

**Scenarios of possible futures** in key UI Health Care markets

- Early warning signs for monitoring changes
- Wind tunnel for testing strategies and innovations

**Implications for UI Health Care strategy and investment**

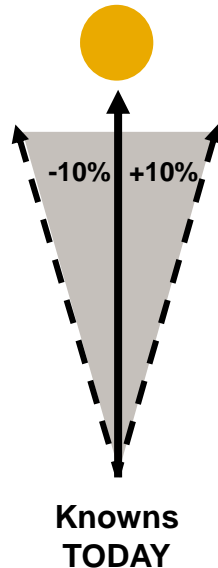
- Robust and contingent implications
- New initiatives for building growth platforms

# Scenarios vs. Forecasts

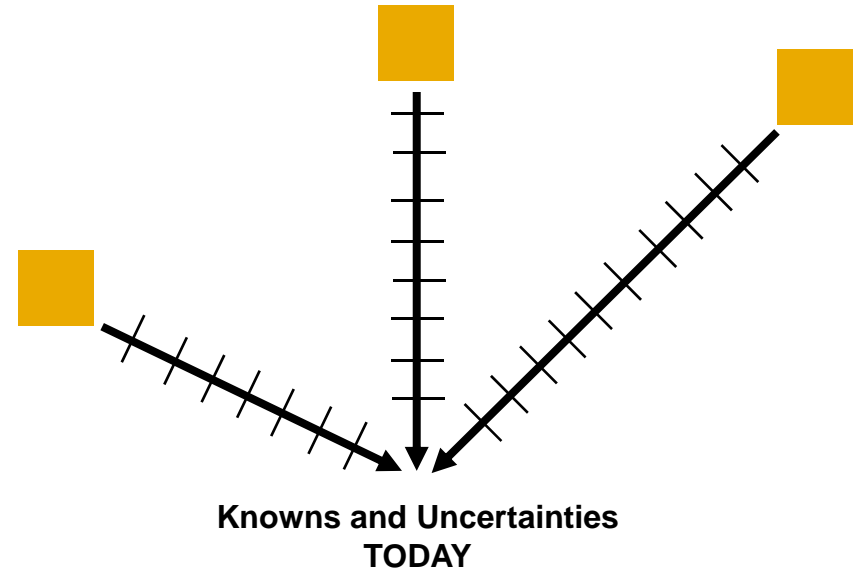
Strategic Planning: The Future(s) of UI Health Care

*Scenarios anticipate multiple futures based on both what we know and what we don't know, and thus provide a broader perspective than traditional forecast-based planning.*

**FORECAST PLANNING**  
*Planning for One Future*



**SCENARIO PLANNING**  
*Planning for Any Future*



# Potential Challenges Facing UI Health Care

Strategic Planning: The Future(s) of UI Health Care



## **COULD BE SIMPLY INCREMENTAL “IF”**

- Slow to moderate economic growth—difficult environment for investment
- Regulatory limitations on medical technologies (Theranos backlash, privacy issues predominate)
- Slow development of big data and communications technologies (Difficult to integrate, massive system failure, lawsuits)

## **COULD BE REVOLUTIONARY “IF”**

- Breakthroughs in medical technologies
- Increased economic growth (more capital available)
- Increased investments in all types of technologies
- Improved applications of big data for medical purposes

# Potential Challenges Facing UI Health Care

Strategic Planning: The Future(s) of UI Health Care

## *Changes in Landscape (Competition)*

### TRADITIONAL HEALTH CARE LANDSCAPE

- State restrictions on competition
- Obligation for cares (Iowa Care like world)
- Focus in reducing costs
- Limitations in availability of talent
- Increased costs of labor
  - » Single payer base care – intense competition at upper levels
- New expectations for care and delivery models (from patient-centered care to patient-directed care)
- Broadening of health care market
  - » Medical tourism encouraged by insurers

New Models,  
Players and  
Partnerships



Traditional Models,  
Players and  
Partnerships

### NEW HEALTH CARE LANDSCAPE

- Rapid increases in costs – but also major rewards for risk taking
  - » Push toward for-profit medicine
  - » Google – Facebook - VCs are getting in healthcare
  - » Providers assume risk in bundle payment models
  - » Health Care insurance becomes portable
  - » Single payer base care – intense competition at upper levels
- New expectations for care and delivery models (from patient-centered care to patient-directed care)
- Broadening of health care market
  - » Medical tourism encouraged by insurers
- Insurers become providers – and vice-versa

# Scenarios for the Future of Health Care

Strategic Planning: The Future(s) of UI Health Care

## BUILD NETWORKS

To provide full access and secure referral

*New Models, Players and Partnerships*

## BUILD CAPACITY

To manage change, granularity-accelerate learning to support both deconstruction and re-integration

**A WORLD OF NEW MODELS**  
More information, More access

**A WORLD OF PLATFORMS AND APPS**  
Direct to Consumer/-Directed Care

*Incremental Technologies*

BIG DATA, ICT AND

MEDICAL TECHNOLOGIES

*Revolutionary Technologies*

**A WORLD OF STATUS QUO**  
Barriers to Change

**A WORLD OF NEW FOUNDATIONS**  
Tech-enabled Hub and Spoke

## BUILD FLEXIBILITY

Manage your money-costs-capital

*Traditional Models, Players and Partnerships*

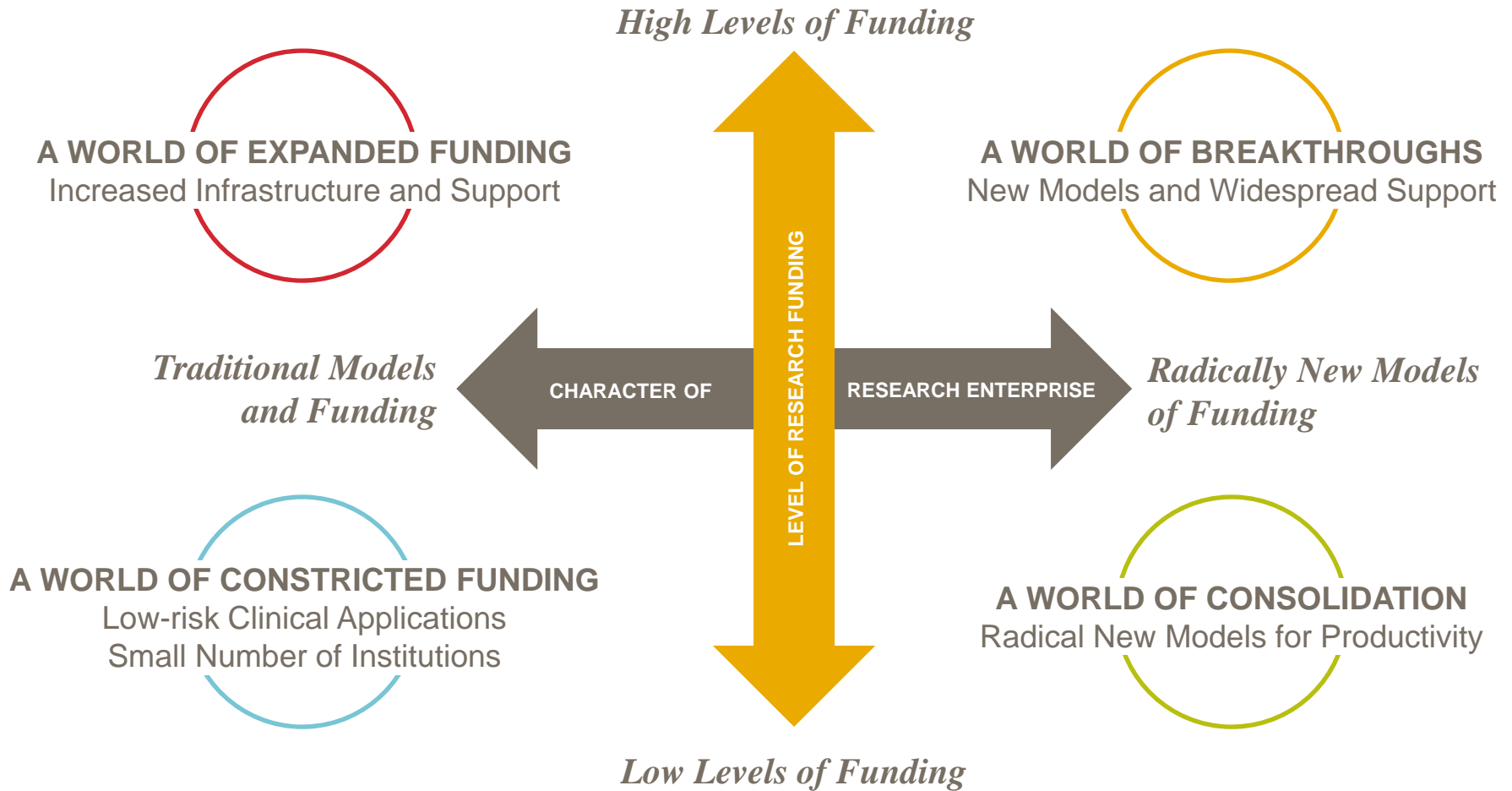
## BUILD SCALE

With carefully-chosen provider partnerships and integration with advanced technology platforms



# Scenarios for the Future of Research

Strategic Planning: The Future(s) of UI Health Care



# Education Decision Acceleration Event

Strategic Planning: The Future(s) of UI Health Care



- Identified the education imperatives/goals that are the central framework for creating the strategic plan
- Created a roadmap highlighting strategies and tactics to support the education imperatives/goals
- Defined and made recommendations on the organizational implications associated with the strategies



# Tripartite Mission

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Strategy Forward: UI Health Care Integrated Strategic Plan, 2017-2020

## *Changing medicine. Changing lives.*

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University of Iowa Health Care is **changing medicine** through pioneering discovery, innovative interprofessional education, delivery of superb clinical care and an extraordinary patient experience in a multidisciplinary, collaborative, team-based environment; and **changing lives**, preventing and curing disease, improving health and well-being, assuring access to care for people in Iowa and throughout the world.



# Our Vision: World Class People. World-Class Medicine.

Strategy Forward: UI Health Care Integrated Strategic Plan, 2017-2020

## *World Class People.*

Building on our greatest strength.

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## *World Class Medicine.*

Creating a new standard of excellence in integrated patient care, research and education.

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## *For Iowa and the World.*

Making a difference in quality of life and health for generations to come.

# Our Values: I CARE

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Strategy Forward: UI Health Care Integrated Strategic Plan, 2017-2020

I

## *Innovation*

We seek creative ways to solve problems.

C

## *Collaboration*

We believe teamwork—guided by compassion and commitment—is the best way to work.

A

## *Accountability*

We behave ethically, act openly and with integrity in all that we do, taking responsibility for our actions.

R

## *Respect*

We honor diversity, recognize the worth and dignity of every person and aim to earn the trust of all whom we serve.

E

## *Excellence*

We strive to achieve excellence in all that we do.

# Goals

Strategy Forward: UI Health Care Integrated Strategic Plan, 2017-2020

1



The Best People

2



Collaborative  
Learning,  
Research, and  
Care Models

3



Nimble Structure  
and Accountable  
Culture

4



Diversified  
Financial  
Resources

5



Strong  
Partnerships



# Goal 1: The Best People

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Strategy Forward: UI Health Care Integrated Strategic Plan, 2017-2020

*Foster an environment in which the most talented want to learn, work, and lead here at Iowa.*

## STRATEGIES

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Enhance recruitment and retention of high-performing individuals toward achieving greater diversity

Enhance interprofessional team science and education

Increase individualized learning opportunities through the continuum of medical, scientific, and professional development education



## Goal 2: Collaborative Learning, Research, and Care Models

Strategy Forward: UI Health Care Integrated Strategic Plan, 2017-2020



*Deliver excellent outcomes through team-based collaborations that drive patient-directed care models, education, and research.*

### STRATEGIES

Further develop value-based care models

Transform interprofessional models to support research, team-based care, education, and practice

## Goal 3: Nimble Structure and Accountable Culture

Strategy Forward: UI Health Care Integrated Strategic Plan, 2017-2020



*Provide clear and supportive organizational structures that allow our people to do their best work and achieve results supporting our tripartite mission.*

### STRATEGIES

Leverage informatics for analysis and data-driven decision-making

Establish clear criteria and decision-making processes that support focused prioritization and investment

Strengthen integrated marketing and communications to support growth and build the UI Health Care brand

# Goal 4: Diversified Financial Resources

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Strategy Forward: UI Health Care Integrated Strategic Plan, 2017-2020



*Ensure sustainability of our tripartite mission through a broad base of financial resources.*

## STRATEGIES

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Enhance internal operations and create alignment to increase revenues, decrease costs, and optimize efficiencies

Increase philanthropic support for UI Health Care by identifying new sources of revenue

Build more (and broader) relationships with industry and the private sector to develop and implement innovative research initiatives

Identify new and/or strengthen current initiatives with potential to convert to business enterprises and produce profits with or without a partner

# Goal 5: Strong Partnerships

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Strategy Forward: UI Health Care Integrated Strategic Plan, 2017-2020



*Grow in Iowa and beyond, working with partners who share our values.*

## STRATEGIES

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Establish partnerships that will drive growth and dollars and increase scale

Improve access to and increase UI Health Care's share of complex care

Expand geographic reach—defined as physical presence

Enhance UI Health Care's position in primary care

Enhance global reach for research activities and relationships



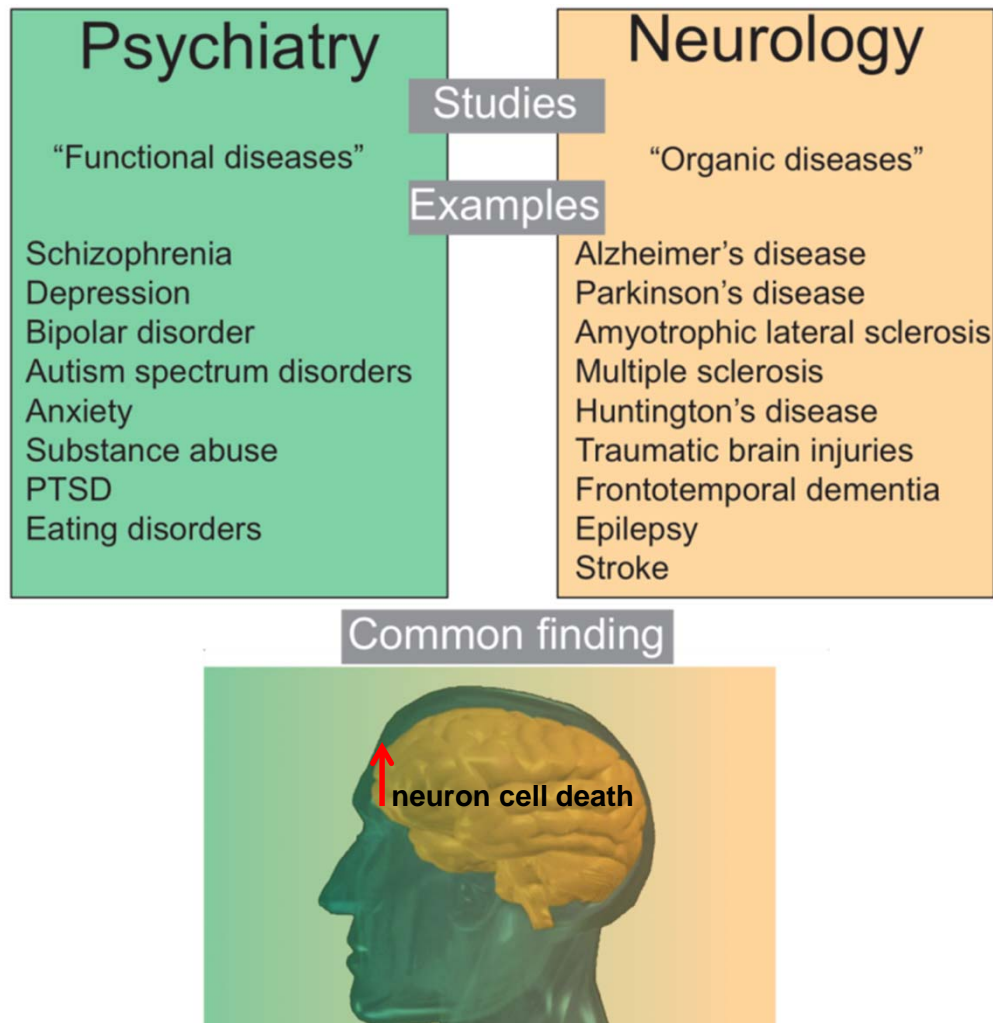
# FACULTY PRESENTATION: DISCOVERY AND DEVELOPMENT OF A NEUROPROTECTIVE DRUG

*Andrew Pieper, MD, PhD*

*Professor of Psychiatry, Neurology, Radiation Oncology,  
and Molecular Physiology and Biophysics*

# Significant Unmet Need for Neuroprotective Drugs

Discovery and Development of a Neuroprotective Drug





# The Problem

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Discovery and Development of a Neuroprotective Drug

**There are no medicines that block nerve cell death.**



# The Problem

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Discovery and Development of a Neuroprotective Drug

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**Traditional ‘test-tube’ discovery approaches that work for other diseases have failed, and pharmaceutical companies have lost interest in developing medicines that block nerve cell death.**

# The Problem

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Discovery and Development of a Neuroprotective Drug

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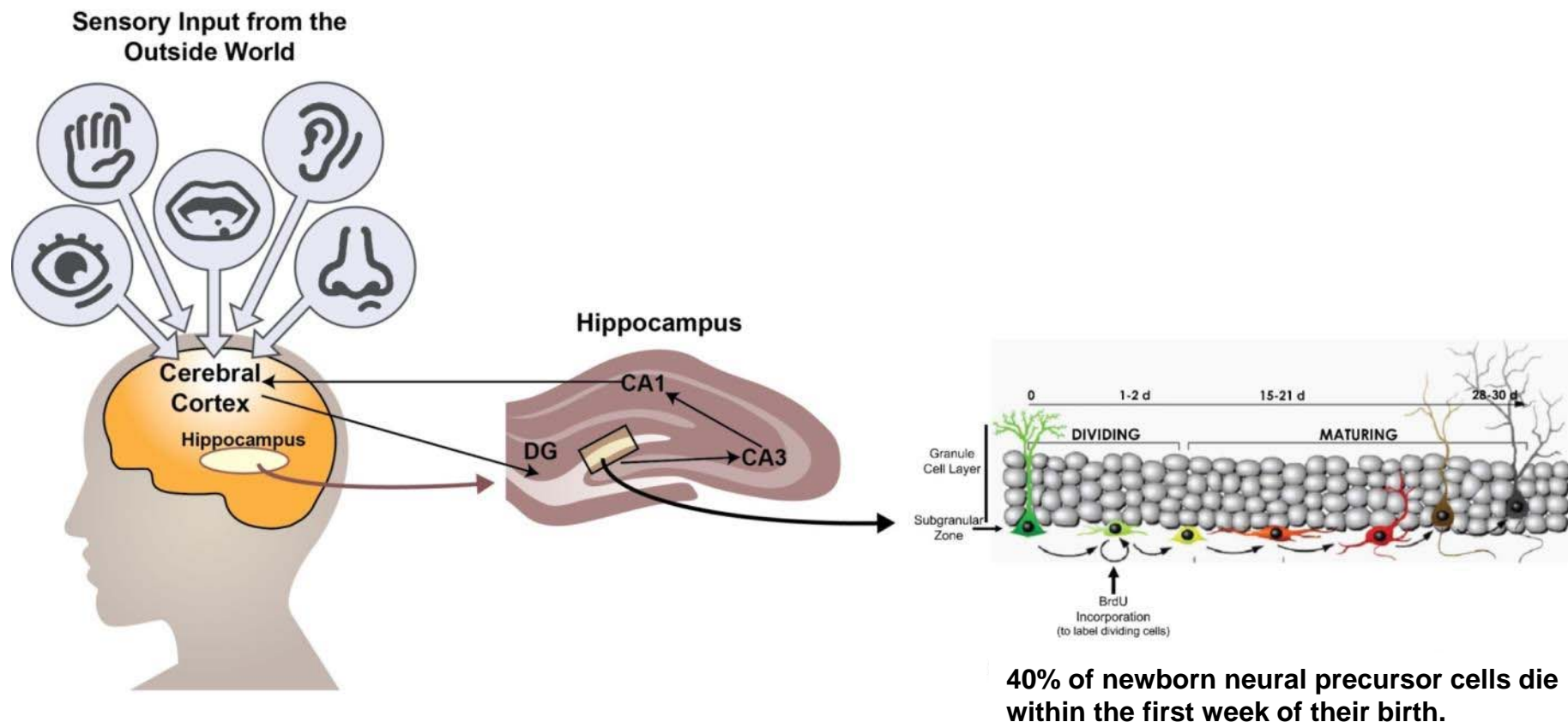
## NEW APPROACH

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*Utilize living animal models of disease to identify new drug-like molecules for drug development.*

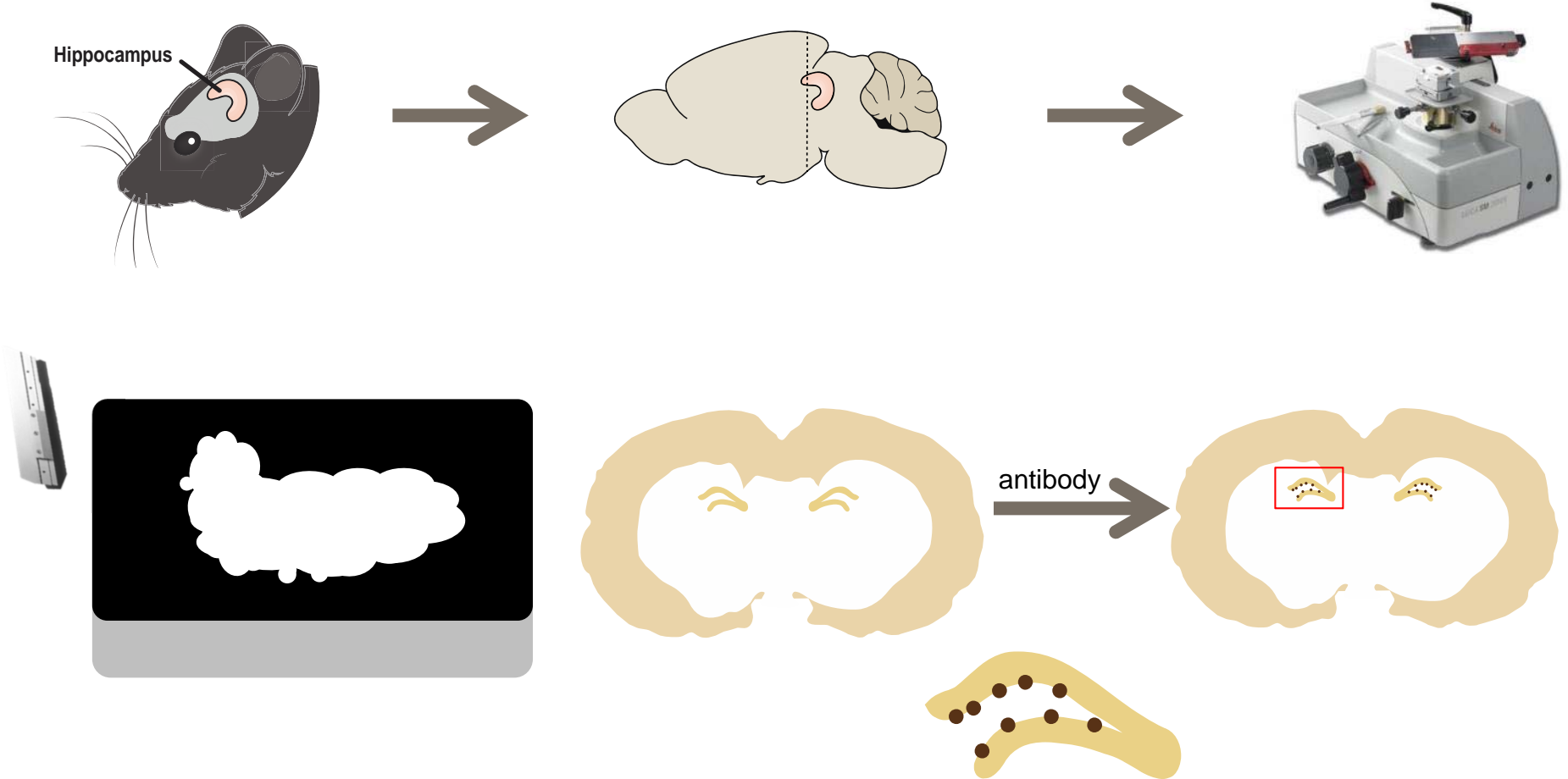
# Adult Neurogenesis in the Hippocampus

Discovery and Development of a Neuroprotective Drug



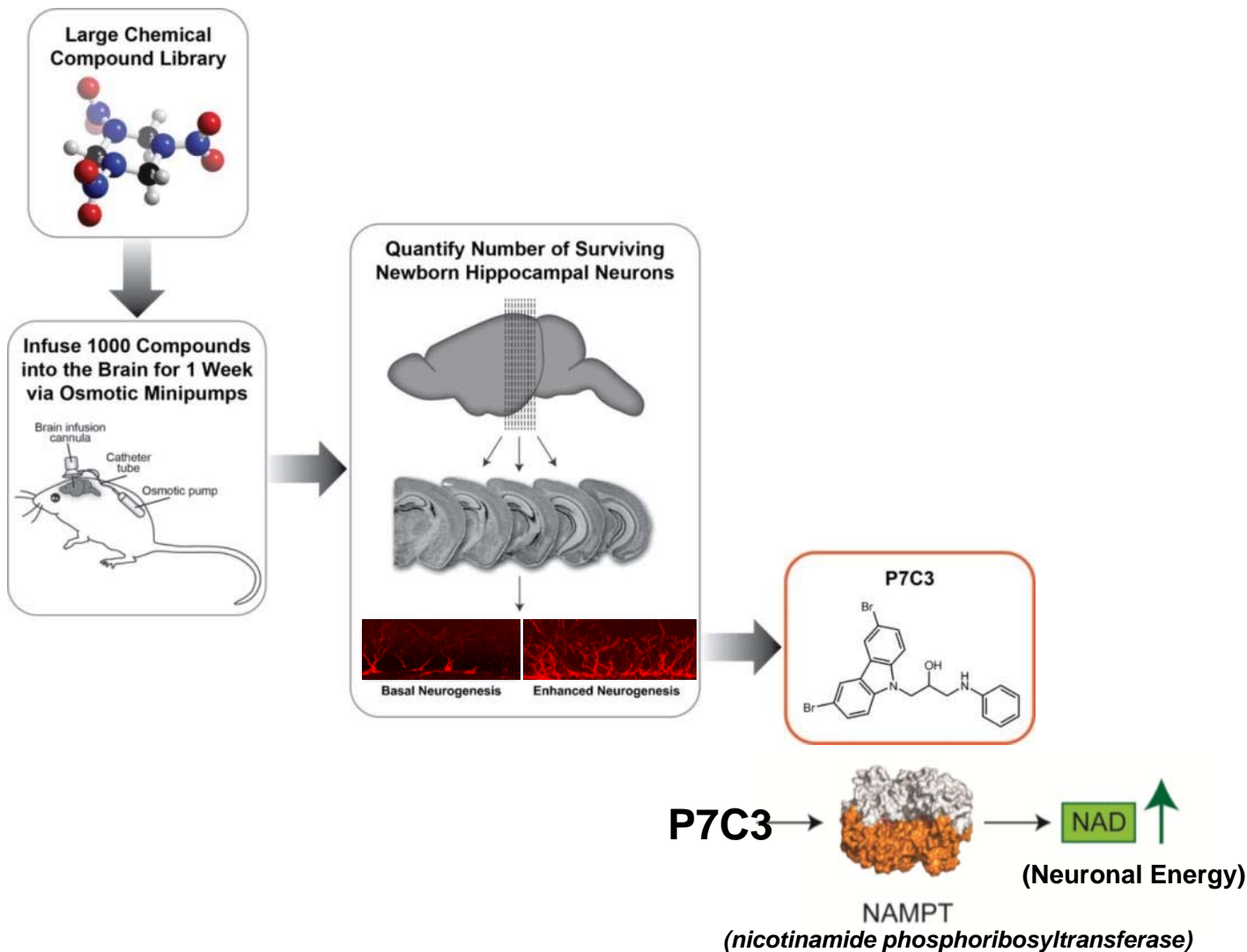
# Immunohistochemistry

Discovery and Development of a Neuroprotective Drug



# Discovery of a Proneurogenic/Neuroprotective Compound

Discovery and Development of a Neuroprotective Drug



# Efficacy of P7C3 Compounds in Preclinical Models of Deficient Hippocampal Neurogenesis

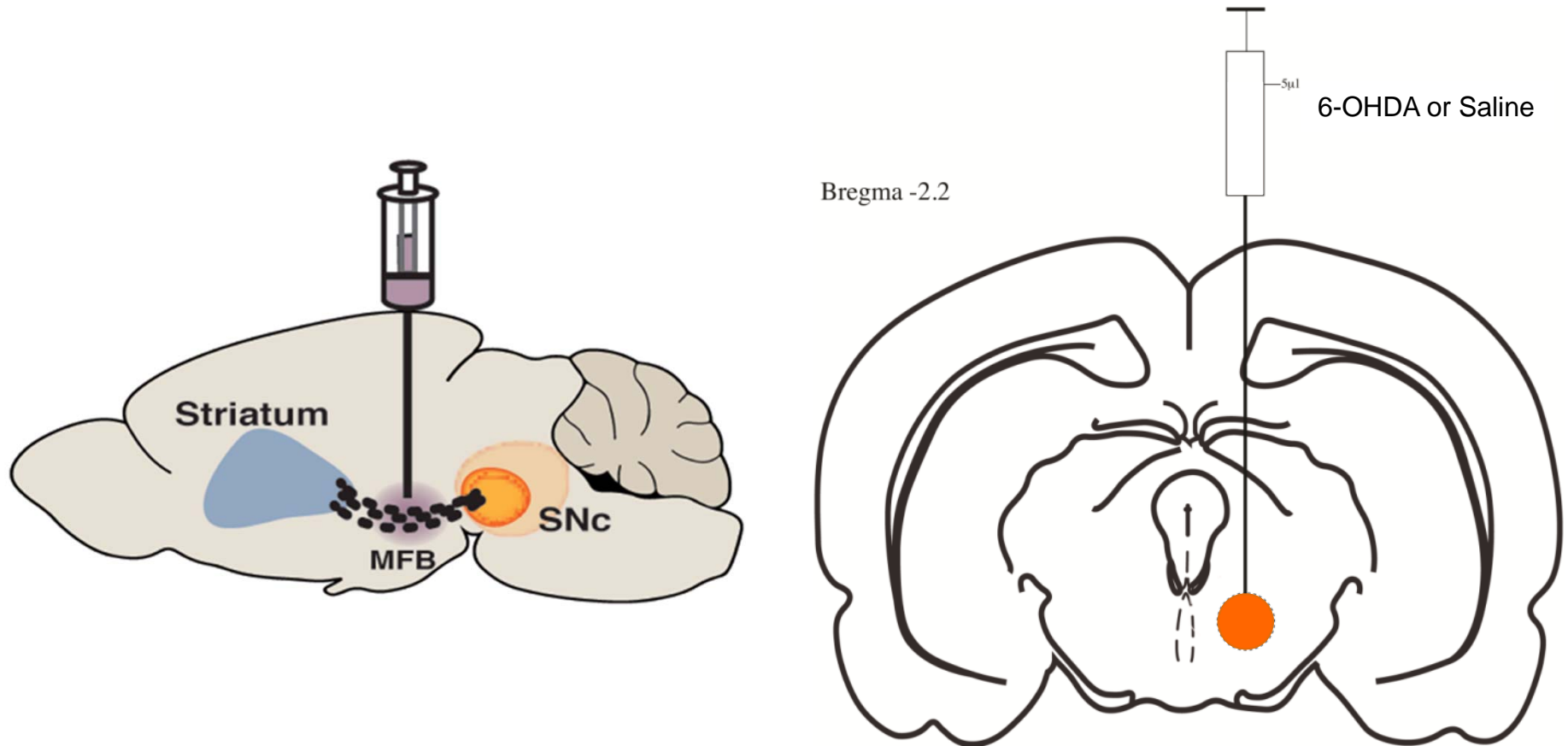
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Discovery and Development of a Neuroprotective Drug

- 1. Aging-associated cognitive decline**  
*(Pieper et al. 2010 Cell 142)*
- 2. NPAS3-deficient mouse model of schizophrenia and intellectual disability**  
*(Pieper et al., 2010, Cell 142)*
- 3. Ca<sub>v</sub>1.2-deficient mouse model of anxiety**  
*(Lee et al., 2016, eNEURO)*
- 4. Chronic stress-associated depression**  
*(Walker et al., 2015, Molecular Psychiatry 20)*
- 5. Brain irradiation-induced cognitive decline**

# Unilateral 6-Hydroxydopamine Model of Parkinson's Disease

Discovery and Development of a Neuroprotective Drug





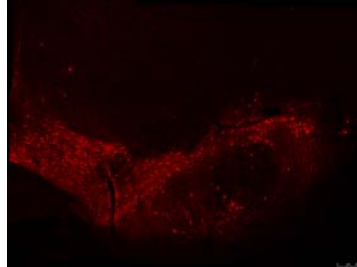
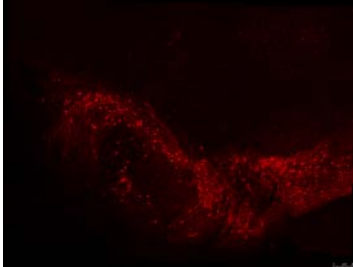
# P7C3-S243 Blocks 6-OHDA-Toxicity in Rats (Parkinson's Disease)

Discovery and Development of a Neuroprotective Drug

Uninjected  
Hemisphere (L)

Injected  
Hemisphere (R)

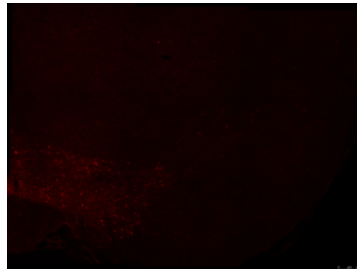
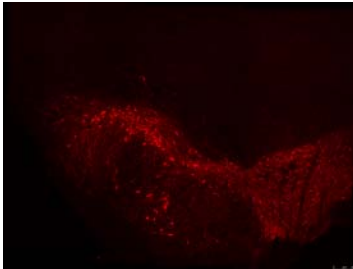
Sham  
Vehicle  
10mg/kg/d



Sham + Vehicle



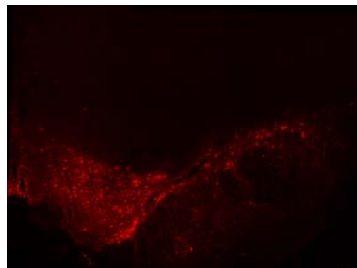
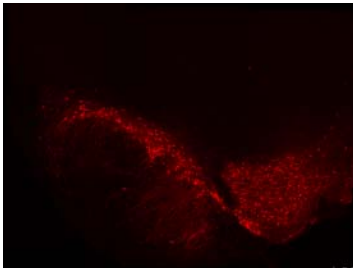
6-OHDA  
Vehicle



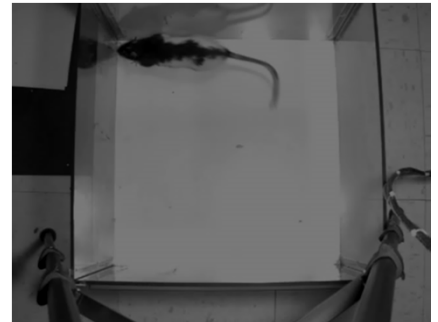
6-OHDA + Vehicle



6-OHDA  
S243  
10mg/kg/d



6-OHDA + S243



# Efficacy of P7C3 Compounds in Preclinical Models of Peripheral Nerve Degeneration

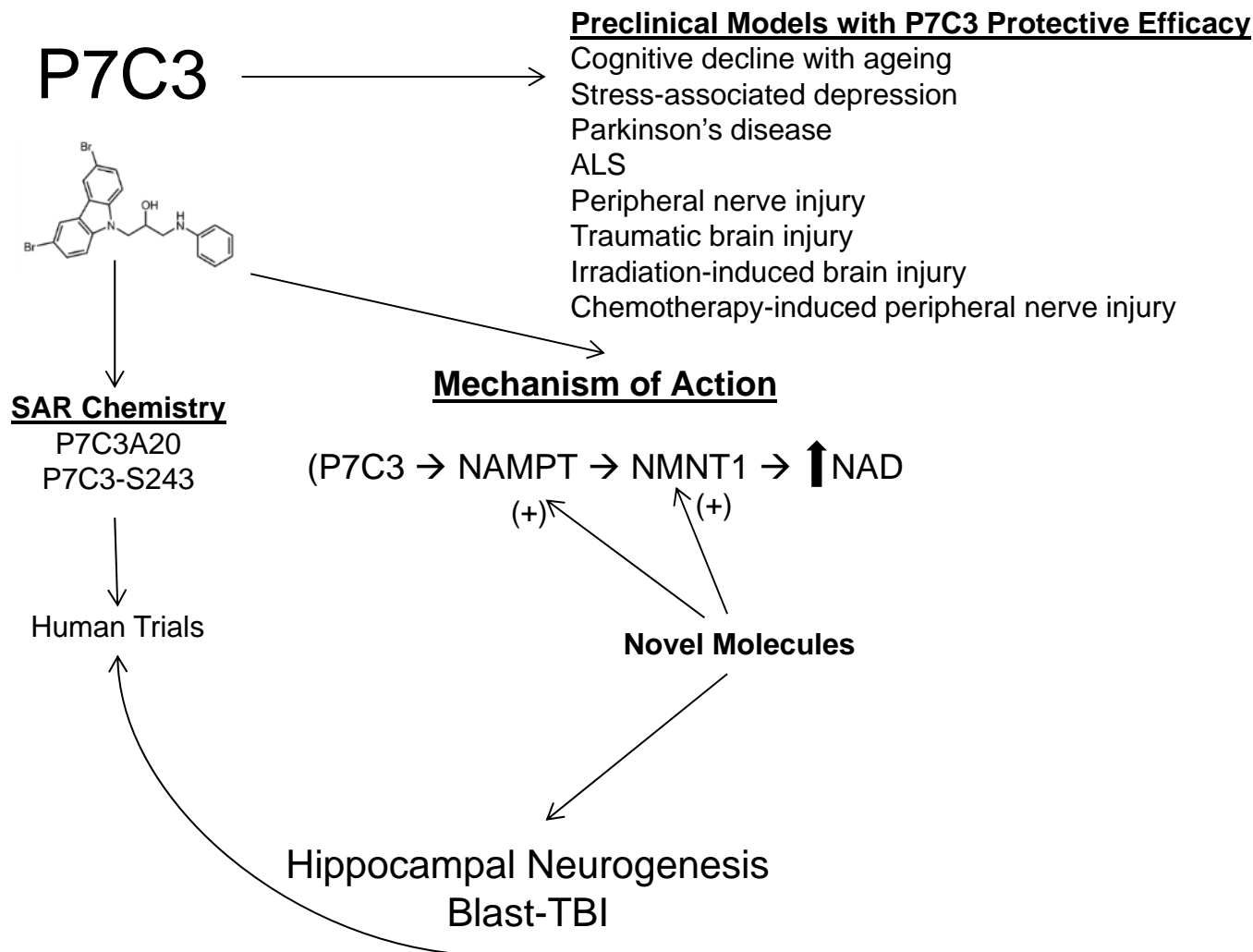
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Discovery and Development of a Neuroprotective Drug

1. **Nerve crush model of obstetric brachial plexus palsy**  
*(Kemp et al., 2015, Neuroscience 284)*
2. **Type II diabetic peripheral neuropathy**  
*(Yorek et al., 2016, under review)*
3. **Chemotherapy-induced peripheral neuropathy**  
*(Lococos et al., 2016, under review)*

# Current Drug-Development Workflow

## Discovery and Development of a Neuroprotective Drug



# Future Directions

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Discovery and Development of a Neuroprotective Drug

Develop a new class of neuroprotective drugs based on P7C3.

Identify new molecules that boost neuronal energy by related mechanisms.

Apply a similar discovery approach with other mouse models of neuropsychiatric disease, such as obsessive compulsive disorder, anxiety and autism.