



# University of Iowa Health Care

*Presentation to*

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

**October 19, 2017**

# Agenda

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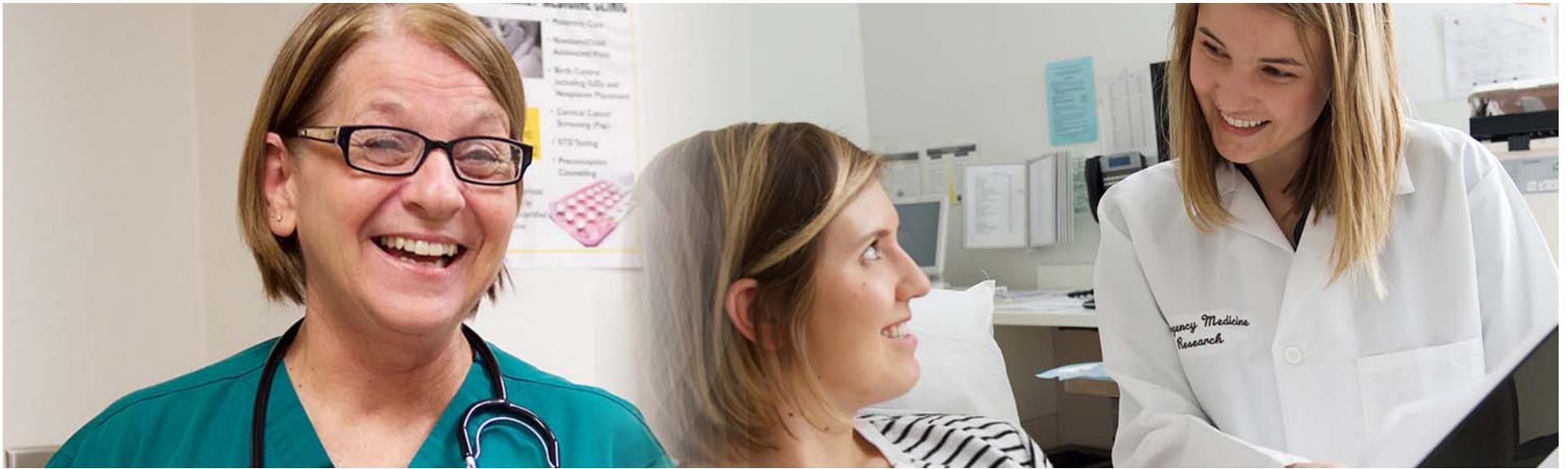
Today's Presentation

Opening Remarks

Operating and Financial Performance

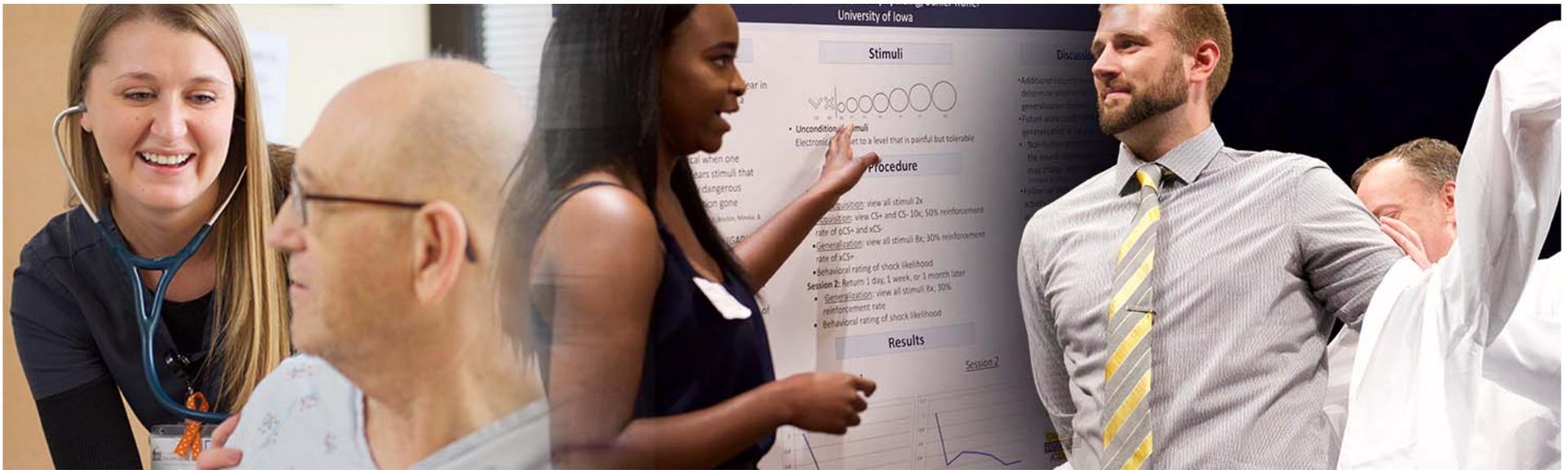
Faculty Presentation: New Approaches to Parkinson's Disease

Update on Search for Vice President for Medical Affairs and  
Dean, Carver College of Medicine



## 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*

*Doug True*

*Interim Associate Vice President for Finance*

*& Chief Financial Officer*

# Volume Indicators

Fiscal Year to Date August 2017

Operating Review (YTD)	Actual	Budget	Prior Year *	Variance to Budget	Variance to Budget %	Variance to Prior Year	Variance to Prior Year %
Discharges	5,927	5,743	5,662	184	3.2% ●	265	4.7% ●
Patient Days	38,585	38,353	37,734	232	0.6% ○	851	2.3% ○
Average Daily Census	622.34	618.60	608.61	3.74	0.6% ○	13.73	2.3% ○
Total Surgeries	5,426	5,937	5,272	(511)	-8.6% ●	154	2.9% ●
- Inpatient	2,607	2,842	2,542	(235)	-8.3% ●	65	2.6% ●
- Outpatient	2,819	3,095	2,730	(276)	-8.9% ●	89	3.3% ●
ED Visits	10,295	10,305	10,268	(10)	-0.1% ○	27	0.3% ○
Total Clinic Visits	159,370	156,092	148,182	3,278	2.1% ○	11,188	7.6% ●

 Greater than 2.5% Favorable     
  Neutral     
  Greater than 2.5% Unfavorable

\* from ongoing operations

# Discharges by Type

Fiscal Year to Date August 2017

Operating Review (YTD)	Actual	Budget	Prior Year	Variance to Budget	Variance to Budget	%	Variance to Prior Year	Variance to Prior Year	%
Adult Medical	2,003	1,611	1,608	392	24.3%	●	395	24.6%	●
Adult Surgical	2,827	3,029	3,036	(202)	-6.7%	●	(209)	-6.9%	●
Adult Psych	221	197	194	24	12.2%	●	27	13.9%	●
<i>Subtotal – Adult</i>	<i>5,051</i>	<i>4,837</i>	<i>4,838</i>	<i>214</i>	<i>4.4%</i>	●	<i>213</i>	<i>4.4%</i>	●
Pediatric Medical & Surgical	609	664	605	(55)	-8.3%	●	4	0.7%	○
Pediatric Critical Care	171	139	117	32	23.0%	●	54	46.2%	●
Pediatric Psych	96	103	102	(7)	-6.8%	●	(6)	-5.9%	●
<i>Subtotal – Pediatrics</i>	<i>876</i>	<i>906</i>	<i>824</i>	<i>(30)</i>	<i>-3.3%</i>	●	<i>52</i>	<i>6.3%</i>	●
<b>TOTAL</b>	<b>5,927</b>	<b>5,743</b>	<b>5,662</b>	<b>184</b>	<b>3.2%</b>	●	<b>265</b>	<b>4.7%</b>	●

 Greater than 2.5% Favorable    
  Neutral    
  Greater than 2.5% Unfavorable

# Discharge Days by Type

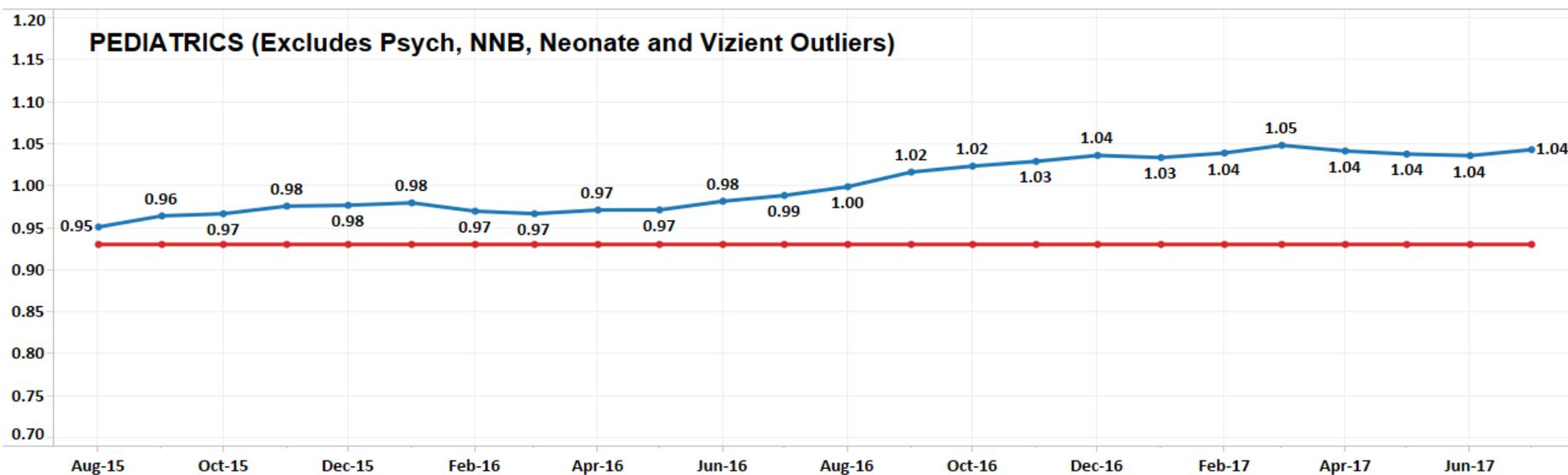
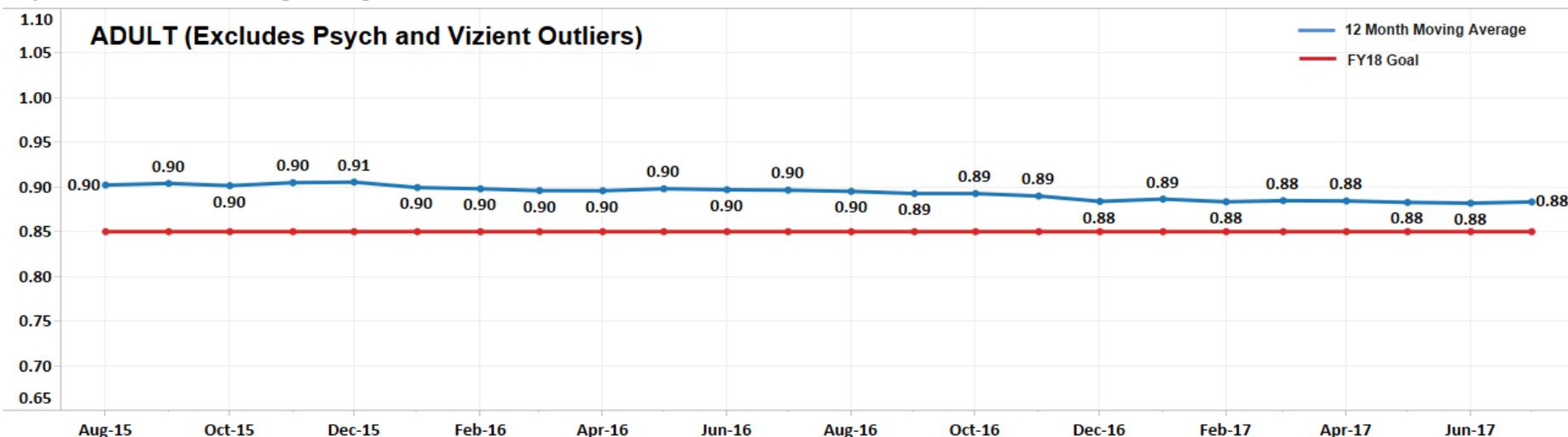
Fiscal Year to Date August 2017

Operating Review (YTD)	Actual	Budget	Prior Year	Variance to Budget	Variance to Budget %	Variance to Prior Year	Variance to Prior Year %
Adult Medical	10,934	9,073	9,029	1,861	20.5%	1,905	21.1%
Adult Surgical	15,356	16,403	16,430	(1,047)	-6.4%	(1,074)	-6.5%
Adult Psych	3,220	3,161	3,109	59	1.9%	111	3.6%
<i>Subtotal – Adult</i>	<i>29,510</i>	<i>28,637</i>	<i>28,568</i>	<i>873</i>	<i>3.0%</i>	<i>942</i>	<i>3.3%</i>
Pediatric Medical and Surgical	3,329	4,280	3,922	(951)	-22.2%	(593)	-15.1%
Pediatric Critical Care	4,554	4,000	3,836	554	13.9%	718	18.7%
Pediatric Psych	722	781	768	(59)	-7.6%	(46)	-6.0%
<i>Subtotal – Pediatrics</i>	<i>8,605</i>	<i>9,061</i>	<i>8,526</i>	<i>(456)</i>	<i>-5.0%</i>	<i>79</i>	<i>0.9%</i>
<b>TOTAL</b>	<b>38,115</b>	<b>37,698</b>	<b>37,094</b>	<b>417</b>	<b>1.1%</b>	<b>1,021</b>	<b>2.8%</b>

 Greater than 2.5% Favorable    
  Neutral    
  Greater than 2.5% Unfavorable

# Length of Stay

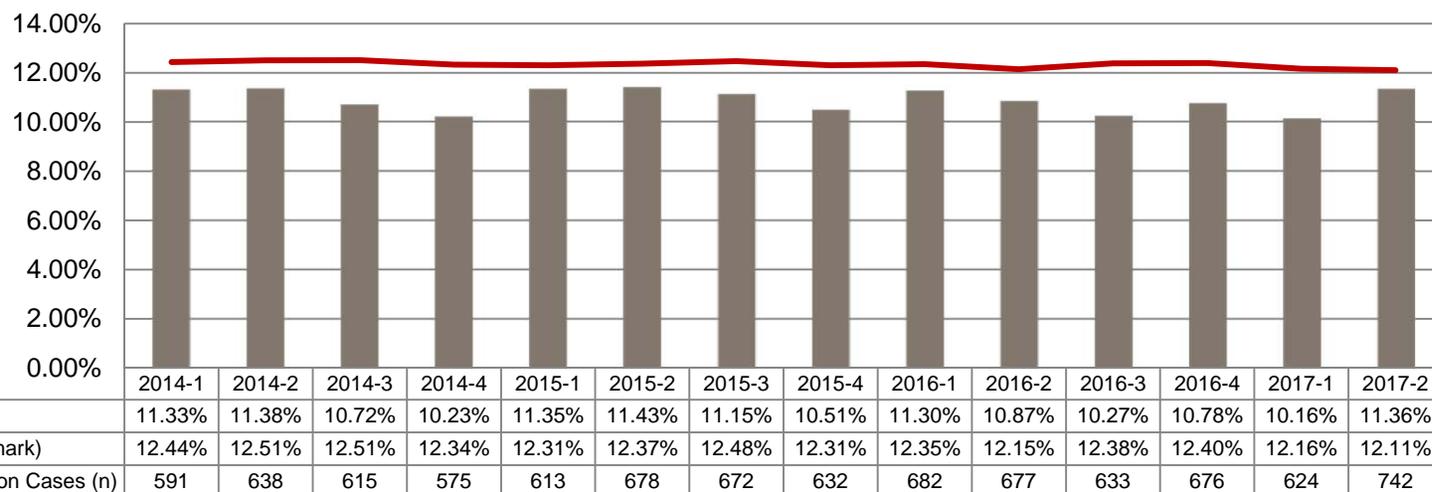
July 2017, 12 Month Moving Average



# Readmissions

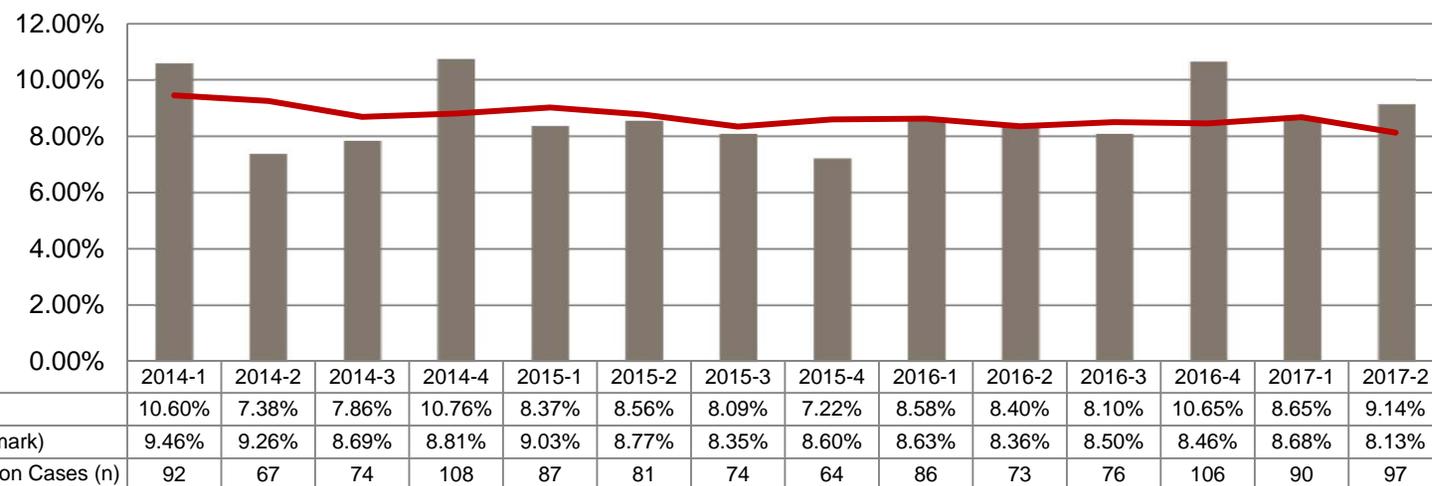
Vizient 30 Day  
All Cause Unplanned  
Readmissions %  
by Calendar Quarter

**Adult Patients**

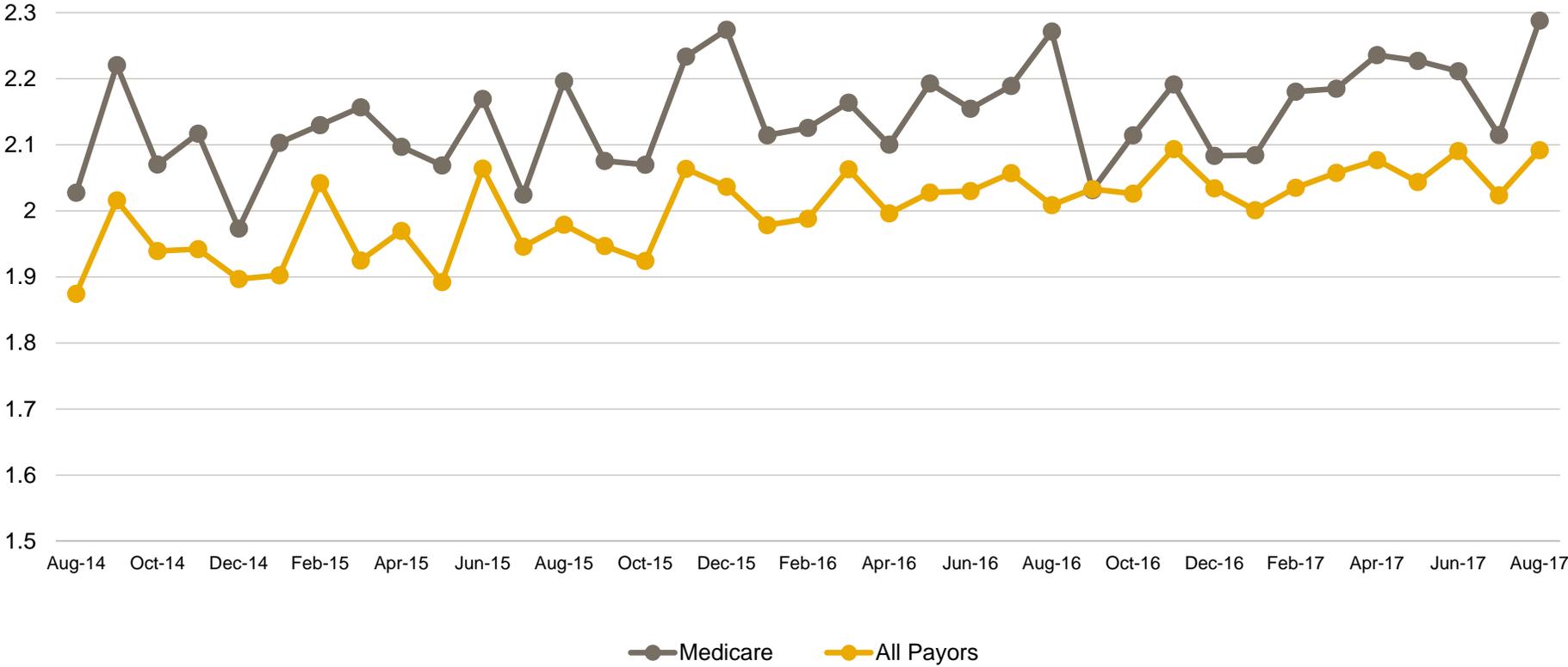


Vizient 30 Day  
All Cause Unplanned  
Readmissions %  
by Calendar Quarter

**Pediatric Patients**



# Case Mix Index



# Total Surgeries – by Clinical Department

Fiscal Year to Date August 2017

Operating Review (YTD)	Actual	Budget	Prior Year	Variance to Budget	Variance to Budget %	Variance to Prior Year	Variance to Prior Year %
Cardiothoracic	208	202	205	6	3.0%	3	-1.5%
Dentistry	177	210	171	(33)	-15.7%	6	3.5%
Dermatology	0	13	2	(13)	-100.0%	(2)	-100.0%
General Surgery	1,274	1,350	1,096	(76)	-5.6%	178	16.2%
Gynecology	333	293	303	40	13.7%	30	9.9%
Internal Medicine	3	1	1	2	200.0%	2	200.0%
Neurosurgery	557	601	603	(44)	-7.3%	(46)	-7.6%
Ophthalmology	695	659	669	36	5.5%	26	3.9%
Orthopedics	1,250	1,225	1,144	25	2.0%	106	9.3%
Otolaryngology	439	775	571	(336)	-43.4%	(132)	-23.1%
Pediatrics	0	1	3	(1)	-100.0%	(3)	-100.0%
Radiology – Interventional	25	19	17	6	31.6%	8	47.1%
Urology w/ Procedure Ste.	465	588	487	(123)	-20.9%	(22)	-4.5%
<b>Total</b>	<b>5,426</b>	<b>5,937</b>	<b>5,272</b>	<b>(511)</b>	<b>-8.6%</b>	<b>154</b>	<b>2.9%</b>
Solid Organ Transplants	65	54	63	11	20.4%	2	3.2%

 Greater than 2.5% Favorable    
  Neutral    
  Greater than 2.5% Unfavorable

# Inpatient Surgeries – by Clinical Department

Fiscal Year to Date August 2017

Operating Review (YTD)	Actual	Budget	Prior Year	Variance to Budget	Variance to Budget	%	Variance to Prior Year	Variance to Prior Year	%
Cardiothoracic	197	194	199	3	1.5%	○	(2)	-1.0%	○
Dentistry	65	61	74	4	6.6%	●	(9)	-12.2%	●
General Surgery	836	901	716	(65)	-7.2%	●	120	16.8%	●
Gynecology	133	136	138	(3)	-2.2%	○	(5)	-3.6%	●
Neurosurgery	463	509	486	(46)	-9.0%	●	(23)	-4.7%	●
Ophthalmology	51	48	25	3	6.3%	●	26	104.0%	●
Orthopedics	632	627	601	5	0.8%	○	31	5.2%	●
Otolaryngology	78	179	142	(101)	-56.4%	●	(64)	-45.1%	●
Radiology – Interventional	23	18	16	5	27.8%	●	7	43.8%	●
Urology w/ Procedure Ste.	129	169	145	(40)	-23.7%	●	(16)	-11.0%	●
<b>Total</b>	<b>2,607</b>	<b>2,842</b>	<b>2,542</b>	<b>(235)</b>	<b>-8.3%</b>	●	<b>65</b>	<b>2.6%</b>	●
Solid Organ Transplants	65	54	63	11	20.4%	●	2	3.2%	●

 Greater than 2.5% Favorable    
  Neutral    
  Greater than 2.5% Unfavorable

# Outpatient Surgeries – by Clinical Department

Fiscal Year to Date August 2017

Operating Review (YTD)	Actual	Budget	Prior Year	Variance to Budget	Variance to Budget %	Variance to Prior Year	Variance to Prior Year %
Cardiothoracic	11	8	6	3	37.5% ●	5	83.3% ●
Dentistry	112	149	97	(37)	-24.8% ●	15	15.5% ●
Dermatology	0	13	2	(13)	-100.0% ●	(2)	-100.0% ●
General Surgery	438	449	380	(11)	-2.4% ○	58	15.3% ●
Gynecology	200	157	165	43	27.4% ●	35	21.2% ●
Internal Medicine	3	1	1	2	200.0% ●	2	200.0% ●
Neurosurgery	94	92	117	2	2.2% ○	(23)	-19.7% ●
Ophthalmology	644	611	644	33	5.4% ●	0	0.0% ○
Orthopedics	618	598	543	20	3.3% ●	75	13.8% ●
Otolaryngology	361	596	429	(235)	-39.4% ●	(68)	-15.9% ●
Pediatrics	0	1	3	(1)	-100.0% ●	(3)	-100.0% ●
Radiology – Interventional	2	1	1	1	100.0% ●	1	100.0% ●
Urology w/ Procedure Ste.	336	419	342	(83)	-19.8% ●	(6)	-1.8% ○
<b>Total</b>	<b>2,819</b>	<b>3,095</b>	<b>2,730</b>	<b>(276)</b>	<b>-8.9%</b> ●	<b>89</b>	<b>3.3%</b> ●

 Greater than 2.5% Favorable    
  Neutral    
  Greater than 2.5% Unfavorable

# Emergency Department

Fiscal Year to Date August 2017

Operating Review (YTD)	Actual	Budget	Prior Year	Variance to Budget	Variance to Budget %	Variance to Prior Year	Variance to Prior Year %
ED Visits	10,295	10,305	10,268	(10)	-0.1% ○	27	0.3% ○
ED Admits	3,619	3,458	3,287	161	4.7% ●	332	10.1% ●
ED Conversion Factor	35.2%	33.6%	32.0%		4.8% ●		10.0% ●
ED Admits / Total Admits	60.9%	59.2%	58.2%		2.9% ●		4.6% ●

 Greater than 2.5% Favorable     
  Neutral     
  Greater than 2.5% Unfavorable

# Total Clinic Visits by Location

Fiscal Year to Date August 2017

Operating Review (YTD)	FY18 ACTUAL				FY17 ACTUAL*				Variance to Prior Year	%	
	On-Site	IRL	Other Off-Site	Total	On-Site	IRL	Other Off-Site	Total			
FAMILY MEDICINE	5,194	2,886	17,419	25,499	6,861	1,566	18,588	27,015	(1,516)	-5.6%	●
GENERAL INTERNAL MEDICINE		4,914		4,914		4,401		4,401	513	11.7%	●
PEDIATRICS		3,498	4,833	8,331		3,501	1,565	5,066	3,265	64.4%	●
<i>SUBTOTAL: PRIMARY CARE</i>	<i>5,194</i>	<i>11,298</i>	<i>22,252</i>	<i>38,744</i>	<i>6,861</i>	<i>9,468</i>	<i>20,153</i>	<i>36,482</i>	<i>2,262</i>	<i>6.2%</i>	●
ANESTHESIA	1,256	62		1,318	1,114	52		1,166	152	13.0%	●
CTR DISABILITIES & DEVELOPMENT	1,761			1,761	1,803			1,803	(42)	-2.3%	○
CTR FOR DIGESTIVE DISEASES	4,199	920		5,119	3,646	929		4,575	544	11.9%	●
CLINICAL CANCER CENTER	9,622	422	1,064	11,108	9,048	399		9,447	1,661	17.6%	●
DERMATOLOGY	4,117	1,586	1,097	6,800	3,962	1,532	278	5,772	1,028	17.8%	●
GENERAL SURGERY	4,172		302	4,474	3,822		268	4,090	384	9.4%	●
HOSPITAL DENTISTRY	3,193			3,193	3,095			3,095	98	3.2%	●
INTERNAL MEDICINE	5,365	1,524		6,889	5,269	1,184		6,453	436	6.8%	●
NEUROLOGY	2,650			2,650	2,723			2,723	(73)	-2.7%	●
NEUROSURGERY	2,386			2,386	2,418			2,418	(32)	-1.3%	○
OBSTETRICS/GYNECOLOGY	9,967	3,728	1,307	15,002	10,229	3,687		13,916	1,086	7.8%	●
OPHTHALMOLOGY	11,438	1,769		13,207	11,002	1,813	111	12,926	281	2.2%	○
ORTHOPEDICS	13,025	877	92	13,994	12,380	147		12,527	1,467	11.7%	●
OTOLARYNGOLOGY	3,238	1,244		4,482	3,271	1,211		4,482	0	0.0%	○
PEDIATRICS	10,133	909		11,042	10,675	421		11,096	(54)	-0.5%	○
PSYCHIATRY	7,382	4		7,386	6,698	7		6,705	681	10.2%	●
UROLOGY	1,359	2,590		3,949	1,313	2,216		3,529	420	11.9%	●
UI HEART CTR	3,396	2,470		5,866	3,057	1,920		4,977	889	17.9%	●
<i>SUBTOTAL: SPECIALTY CARE</i>	<i>98,659</i>	<i>18,105</i>	<i>3,862</i>	<i>120,626</i>	<i>95,525</i>	<i>15,518</i>	<i>657</i>	<i>111,700</i>	<i>8,926</i>	<i>8.0%</i>	●
<b>TOTAL</b>	<b>103,853</b>	<b>29,403</b>	<b>26,114</b>	<b>159,370</b>	<b>102,386</b>	<b>24,986</b>	<b>20,810</b>	<b>148,182</b>	<b>11,188</b>	<b>7.6%</b>	●

● Greater than 2.5% Favorable     
 ○ Neutral     
 ● Greater than 2.5% Unfavorable

\* from ongoing operations

# Pediatric Clinic Visits by Location

Fiscal Year to Date August 2017

Operating Review (YTD)	FY18 ACTUAL				FY17 ACTUAL*				Variance to Prior Year	%	
	On-Site	IRL	Other Off-Site	Total	On-Site	IRL	Other Off-Site	Total			
FAMILY MEDICINE	623	152	3,730	4,505	728	56	3,678	4,462	43	1.0%	○
GENERAL INTERNAL MEDICINE		15		15		2		2	13	650.0%	●
PEDIATRICS		3,379	4,833	8,212		3,404	1,565	4,969	3,243	65.3%	●
<i>SUBTOTAL: PRIMARY CARE</i>	623	3,546	8,563	12,732	728	3,462	5,243	9,433	3,299	35.0%	●
ANESTHESIA	137			137	151			151	(14)	-9.3%	●
CTR DISABILITIES & DEVELOPMENT	1,761			1,761	1,803			1,803	(42)	-2.3%	○
CTR FOR DIGESTIVE DISEASES	1	1		2	3			3	(1)	-33.3%	●
CLINICAL CANCER CENTER	11			11	20			20	(9)	-45.0%	●
DERMATOLOGY	326	418		744	281	319		600	144	24.0%	●
GENERAL SURGERY	285			285	267			267	18	6.7%	●
HOSPITAL DENTISTRY	391			391	437			437	(46)	-10.5%	●
INTERNAL MEDICINE	11	70		81	36	8		44	37	84.1%	●
NEUROLOGY	100			100	100			100	0	0.0%	○
NEUROSURGERY	408			408	381			381	27	7.1%	●
OBSTETRICS/GYNECOLOGY	175	15		190	139	19		158	32	20.3%	●
OPHTHALMOLOGY	1,994	128		2,122	2,023	107		2,130	(8)	-0.4%	○
ORTHOPEDICS	2,490	38		2,528	2,247	2		2,249	279	12.4%	●
OTOLARYNGOLOGY	592	728		1,320	677	784		1,461	(141)	-9.7%	●
PEDIATRICS	8,704	725		9,429	9,308	359		9,667	(238)	-2.5%	○
PSYCHIATRY	2,163			2,163	1,783			1,783	380	21.3%	●
UROLOGY	29	409		438	41	449		490	(52)	-10.6%	●
UI HEART CTR	4	23		27	3	12		15	12	80.0%	●
<i>SUBTOTAL: SPECIALTY CARE</i>	19,582	2,555		22,137	19,700	2,059		21,759	378	1.7%	○
<b>TOTAL</b>	<b>20,205</b>	<b>6,101</b>	<b>8,563</b>	<b>34,869</b>	<b>20,428</b>	<b>5,521</b>	<b>5,243</b>	<b>31,192</b>	<b>3,677</b>	<b>11.8%</b>	<b>●</b>

● Greater than 2.5% Favorable     
 ○ Neutral     
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\* from ongoing operations

# Adult Clinic Visits by Location

Fiscal Year to Date August 2017

Operating Review (YTD)	FY18 ACTUAL				FY17 ACTUAL*				Variance to Prior Year	%	
	On-Site	IRL	Other Off-Site	Total	On-Site	IRL	Other Off-Site	Total			
FAMILY MEDICINE	4,571	2,734	13,689	20,994	6,133	1,510	14,910	22,553	(1,559)	-6.9%	●
GENERAL INTERNAL MEDICINE		4,899		4,899		4,399		4,399	500	11.4%	●
PEDIATRICS		119		119		97		97	22	22.7%	●
<i>SUBTOTAL: PRIMARY CARE</i>	<i>4,571</i>	<i>7,752</i>	<i>13,689</i>	<i>26,012</i>	<i>6,133</i>	<i>6,006</i>	<i>14,910</i>	<i>27,049</i>	<i>(1,037)</i>	<i>-3.8%</i>	●
ANESTHESIA	1,119	62		1,181	963	52		1,015	166	16.4%	●
CTR FOR DIGESTIVE DISEASES	4,198	919		5,117	3,643	929		4,572	545	11.9%	●
CLINICAL CANCER CENTER	9,611	422	1,064	11,097	9,028	399		9,427	1,670	17.7%	●
DERMATOLOGY	3,791	1,168	1,097	6,056	3,681	1,213	278	5,172	884	17.1%	●
GENERAL SURGERY	3,887		302	4,189	3,555		268	3,823	366	9.6%	●
HOSPITAL DENTISTRY	2,802			2,802	2,658			2,658	144	5.4%	●
INTERNAL MEDICINE	5,354	1,454		6,808	5,233	1,176		6,409	399	6.2%	●
NEUROLOGY	2,550			2,550	2,623			2,623	(73)	-2.8%	●
NEUROSURGERY	1,978			1,978	2,037			2,037	(59)	-2.9%	●
OBSTETRICS/GYNECOLOGY	9,792	3,713	1,307	14,812	10,090	3,668		13,758	1,054	7.7%	●
OPHTHALMOLOGY	9,444	1,641		11,085	8,979	1,706	111	10,796	289	2.7%	●
ORTHOPEDICS	10,535	839	92	11,466	10,133	145		10,278	1,188	11.6%	●
OTOLARYNGOLOGY	2,646	516		3,162	2,594	427		3,021	141	4.7%	●
PEDIATRICS	1,429	184		1,613	1,367	62		1,429	184	12.9%	●
PSYCHIATRY	5,219	4		5,223	4,915	7		4,922	301	6.1%	●
UROLOGY	1,330	2,181		3,511	1,272	1,767		3,039	472	15.5%	●
UI HEART CTR	3,392	2,447		5,839	3,054	1,908		4,962	877	17.7%	●
<i>SUBTOTAL: SPECIALTY CARE</i>	<i>79,077</i>	<i>15,550</i>	<i>3,862</i>	<i>98,489</i>	<i>75,825</i>	<i>13,459</i>	<i>657</i>	<i>89,941</i>	<i>8,548</i>	<i>9.5%</i>	●
<b>TOTAL</b>	<b>83,648</b>	<b>23,302</b>	<b>17,551</b>	<b>124,501</b>	<b>81,958</b>	<b>19,465</b>	<b>15,567</b>	<b>116,990</b>	<b>7,511</b>	<b>6.4%</b>	●

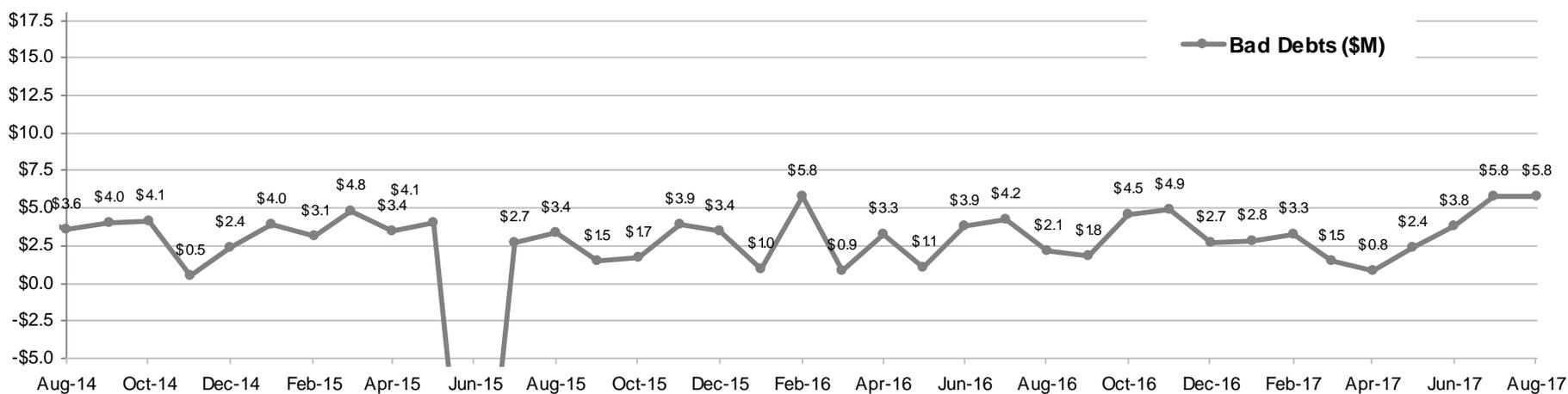
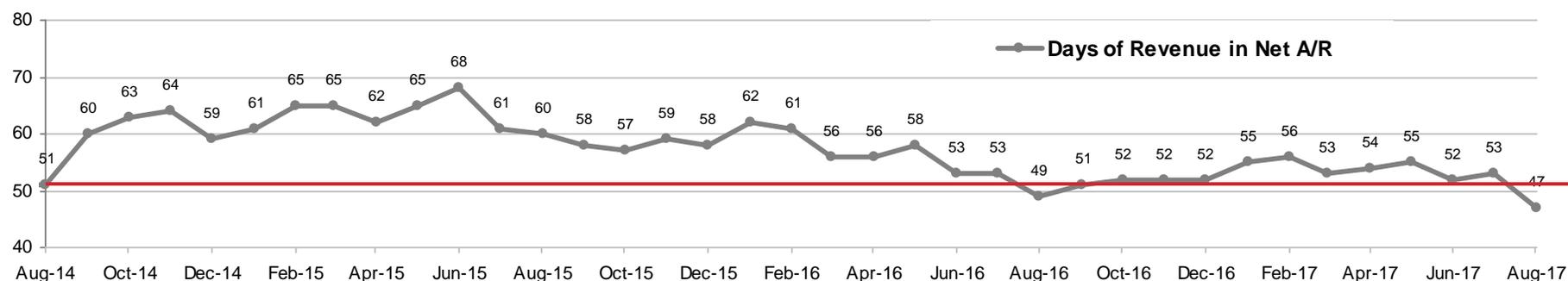
● Greater than 2.5% Favorable     
 ○ Neutral     
 ● Greater than 2.5% Unfavorable

\* from ongoing operations

# Comparative Accounts Receivable

At August 31, 2017

	June 30, 2016	June 30, 2017 (preliminary)	August 31, 2017
Net Accounts Receivable	\$210,723,995	\$210,781,374	\$200,180,752
Net Days in AR	53	52	47

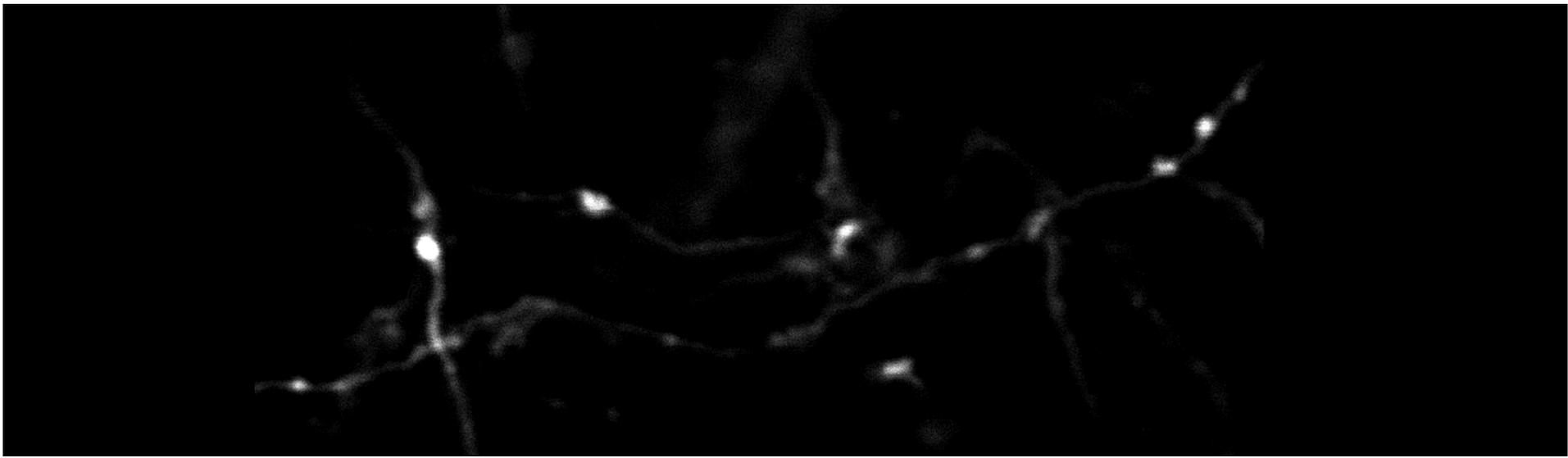


# Comparative Financial Results

Fiscal Year to Date August 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	\$250,662	\$260,940	\$239,723	(\$10,278)	-3.9%	\$10,939	4.6%
Other Operating Revenue	8,389	8,371	8,506	18	0.2%	(117)	-1.4%
<b>Total Revenue</b>	<b>\$259,051</b>	<b>\$269,311</b>	<b>\$248,229</b>	<b>(\$10,260)</b>	<b>-3.8%</b>	<b>\$10,822</b>	<b>4.4%</b>
<b>EXPENSES</b>							
Salaries and Wages	\$130,561	\$132,467	\$119,500	(\$1,906)	-1.4%	\$11,061	9.3%
General Expenses	117,516	116,284	107,522	1,232	1.1%	9,994	9.3%
Operating Expense before Capital	\$248,077	\$248,751	\$227,022	(\$674)	-0.3%	\$21,055	9.3%
<b>Cash Flow Operating Margin</b>	<b>\$10,974</b>	<b>\$20,560</b>	<b>\$21,207</b>	<b>(\$9,586)</b>	<b>-46.6%</b>	<b>(\$10,233)</b>	<b>-48.3%</b>
Capital- Depreciation and Amortization	15,760	16,334	13,183	(574)	-3.5%	2,577	19.5%
<b>Total Operating Expense</b>	<b>\$263,837</b>	<b>\$265,085</b>	<b>\$240,205</b>	<b>(\$1,248)</b>	<b>-0.5%</b>	<b>\$23,632</b>	<b>9.8%</b>
<b>Operating Income</b>	<b>(\$4,786)</b>	<b>\$4,226</b>	<b>\$8,024</b>	<b>(\$9,012)</b>	<b>-213.3%</b>	<b>(\$12,810)</b>	<b>-159.6%</b>
<b>Operating Margin %</b>	<b>-1.8%</b>	<b>1.6%</b>	<b>3.2%</b>		<b>-3.4%</b>		<b>-5.0%</b>
Gain (Loss) on Investments	712	2,014	4,450	(1,302)	-64.6%	(3,738)	-84.0%
Other Non-Operating	(2,050)	(2,259)	(1,885)	209	9.3%	(165)	-8.8%
<b>Net Income</b>	<b>(6,124)</b>	<b>\$3,981</b>	<b>\$10,589</b>	<b>(\$10,105)</b>	<b>-253.8%</b>	<b>(\$16,713)</b>	<b>-157.8%</b>
<b>Net Margin %</b>	<b>-2.4%</b>	<b>1.5%</b>	<b>4.2%</b>		<b>-3.9%</b>		<b>-6.6%</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.



# FACULTY PRESENTATION

## New Approaches to Parkinson's Disease

*Kumar Narayanan, MD, PhD*  
*Assistant Professor of Neurology*

# Parkinson's disease patients

New approaches to Parkinson's disease

## Video 1

Parkinson's disease patients have **motor** and **cognitive** symptoms

Source: <https://youtu.be/uBh2LxTW0s0>

# Three problems in Parkinson's disease

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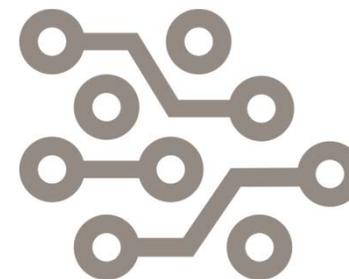
New approaches to Parkinson's Disease



Early  
diagnosis



Slowing down  
the disease



Compensating for  
dysfunctional circuits

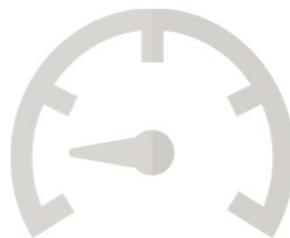
# Three problems in Parkinson's disease

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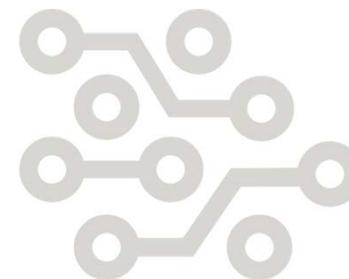
New approaches to Parkinson's disease



**Early  
diagnosis**



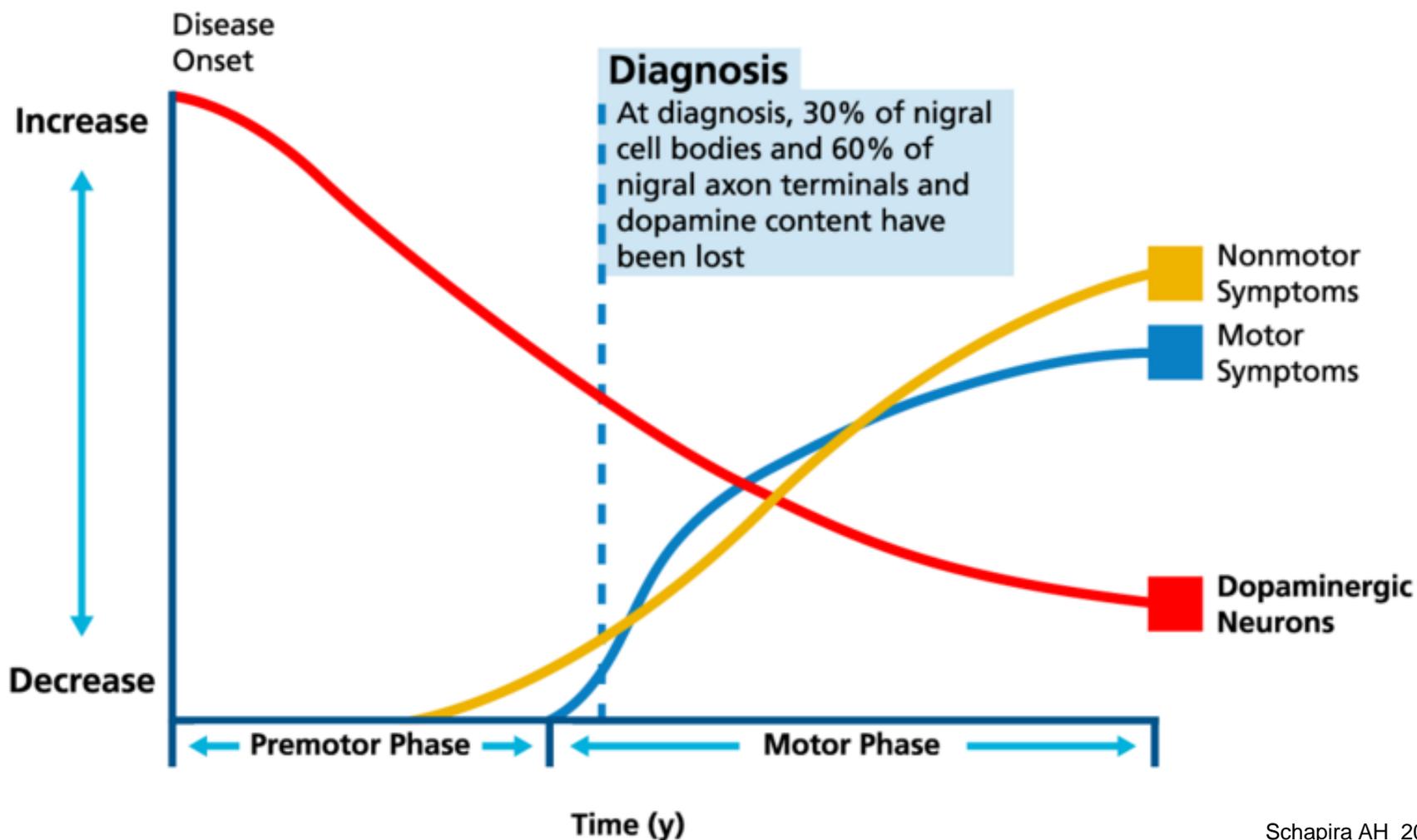
Slowing down  
the disease

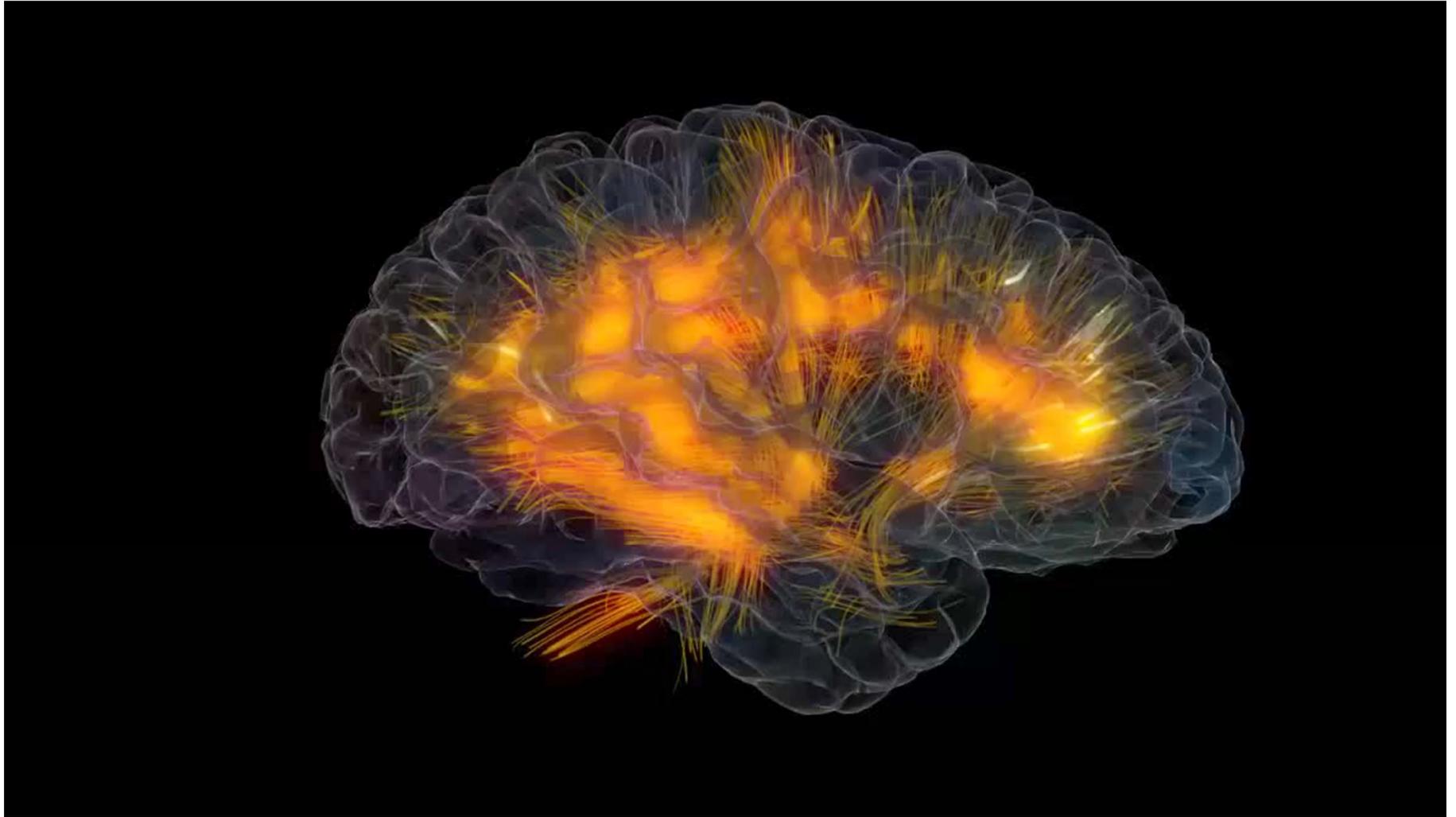


Compensating for  
dysfunctional circuits

# We need to diagnose Parkinson's disease earlier

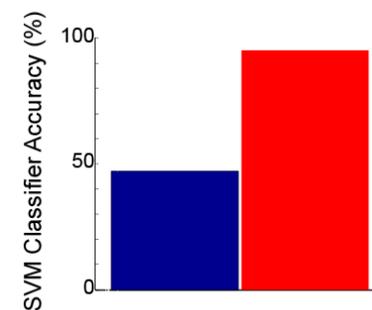
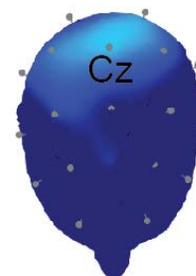
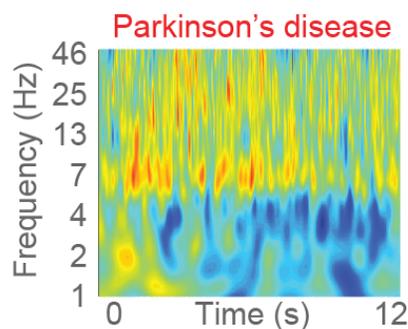
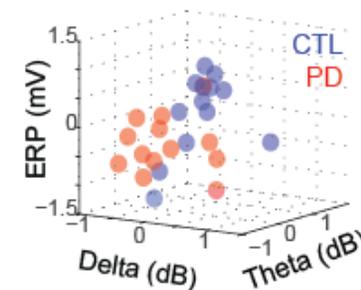
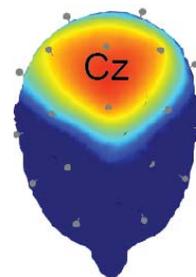
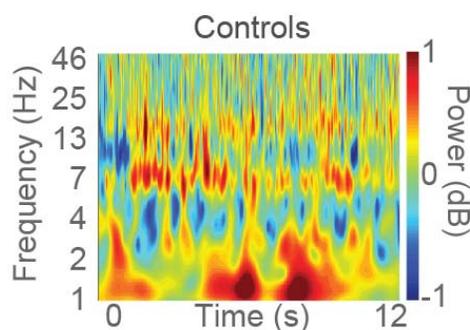
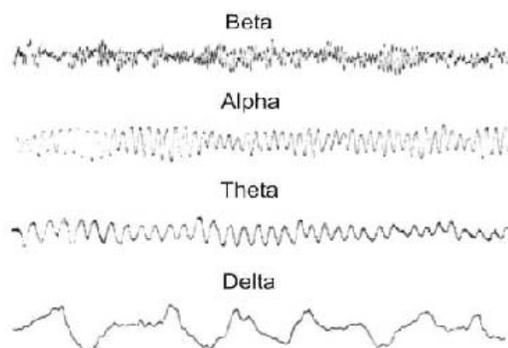
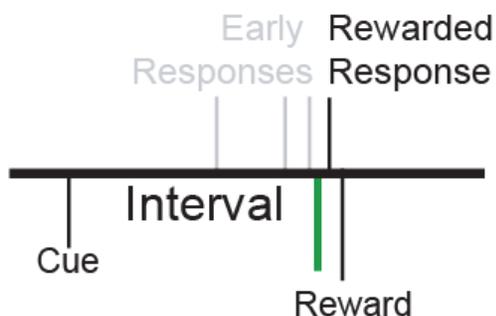
New approaches to Parkinson's Disease





# Patients have decreased low frequency brain rhythms

New approaches to Parkinson's disease



Soura Dasgupta



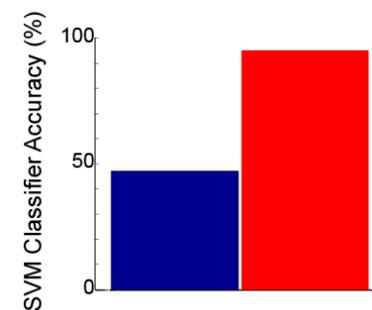
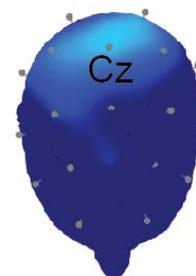
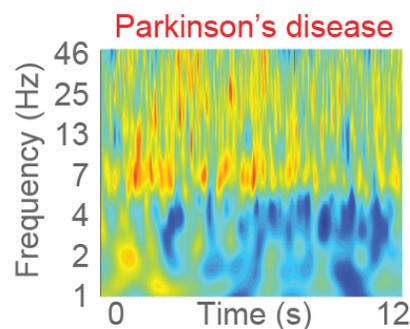
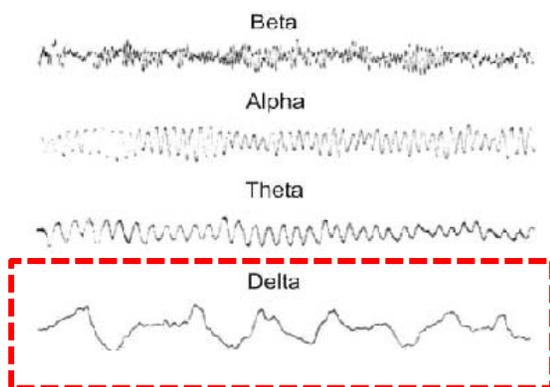
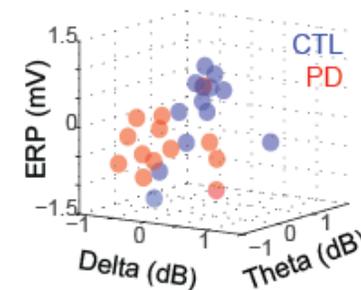
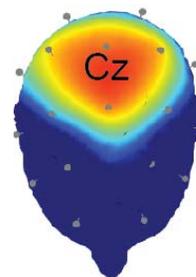
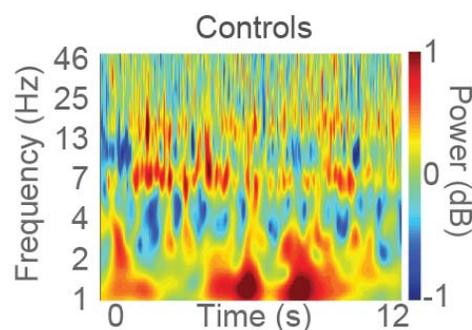
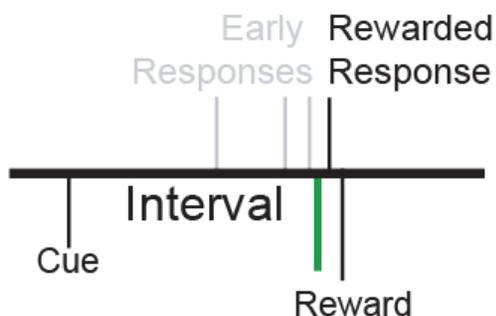
Fahim Anjum



Krystal Parker

# Patients have decreased low frequency brain rhythms

New approaches to Parkinson's disease



Soura Dasgupta



Fahim Anjum



Krystal Parker

# Three problems in Parkinson's disease

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New approaches to Parkinson's disease



Early  
diagnosis



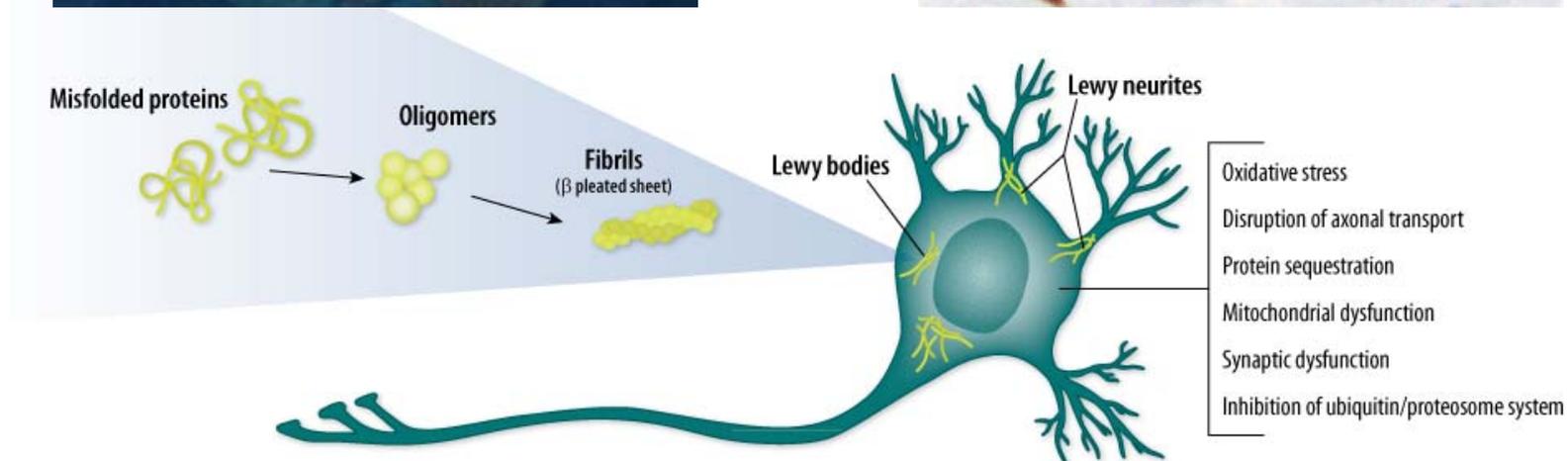
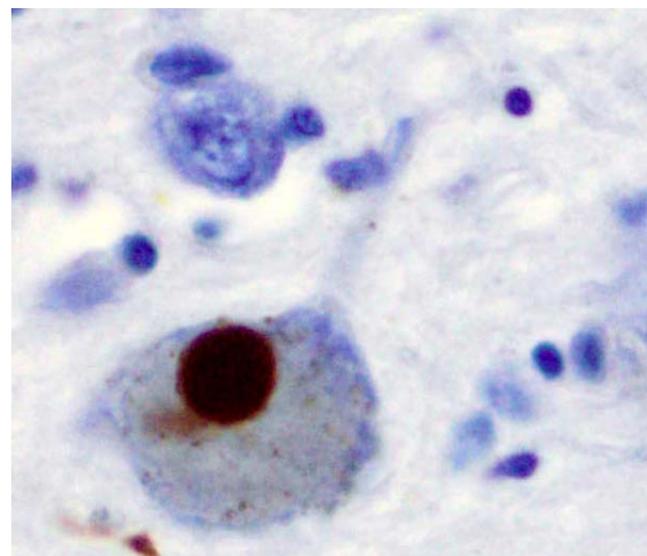
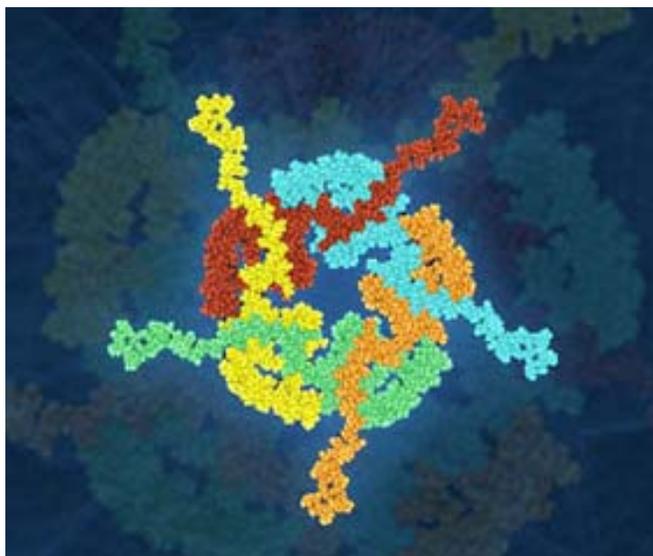
**Slowing down  
the disease**



Compensating for  
dysfunctional circuits

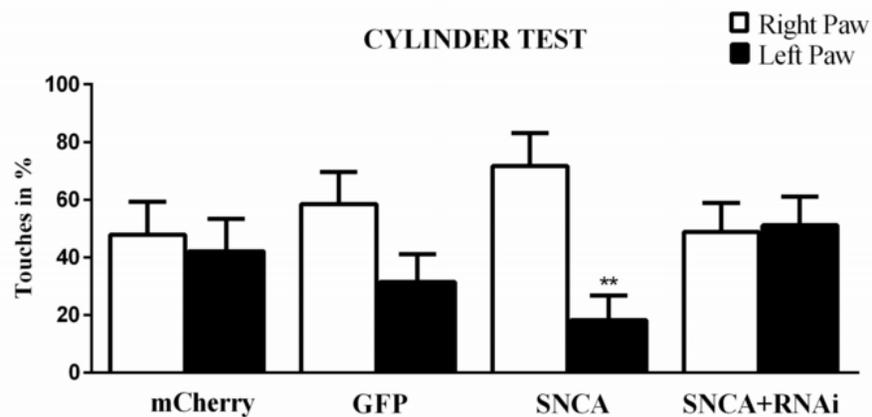
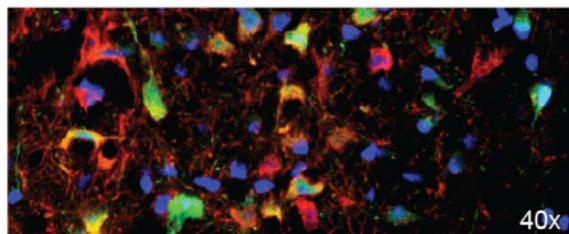
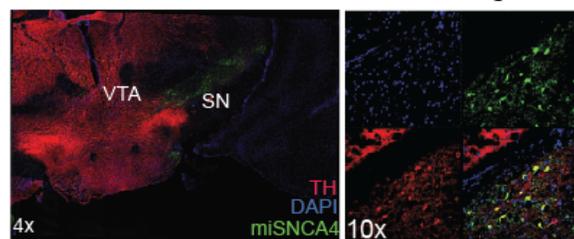
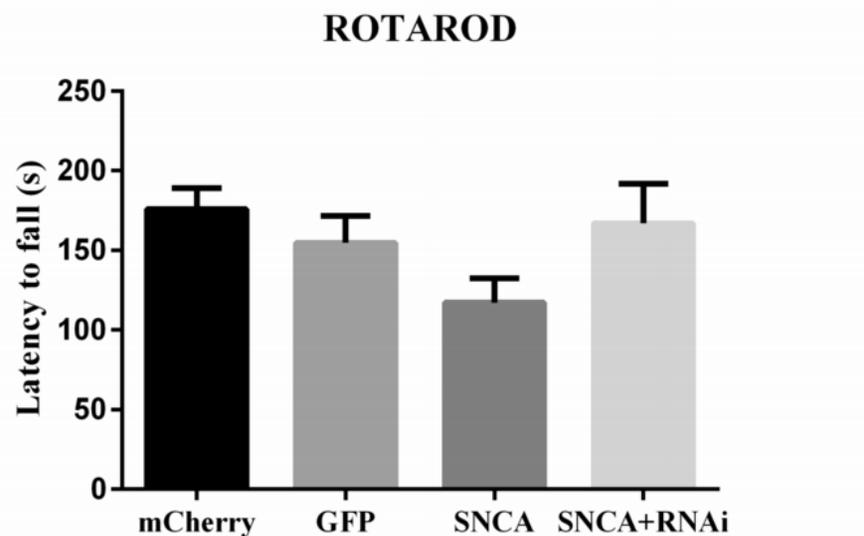
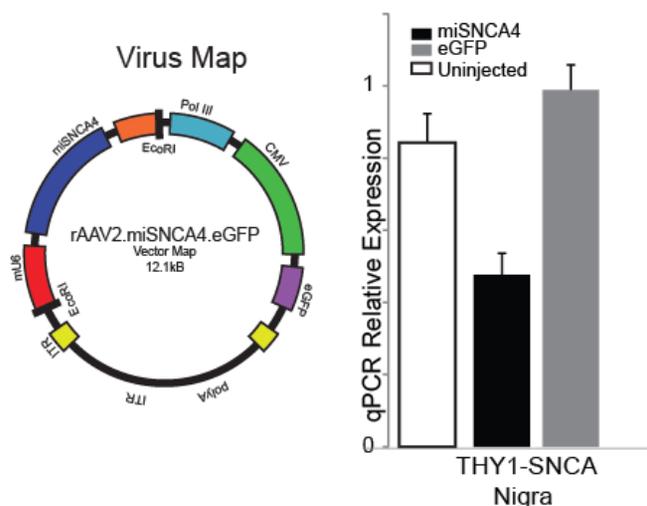
# Alpha-synuclein is involved in Parkinson's disease

New approaches to Parkinson's disease



# An engineered virus that can reduce alpha-synuclein

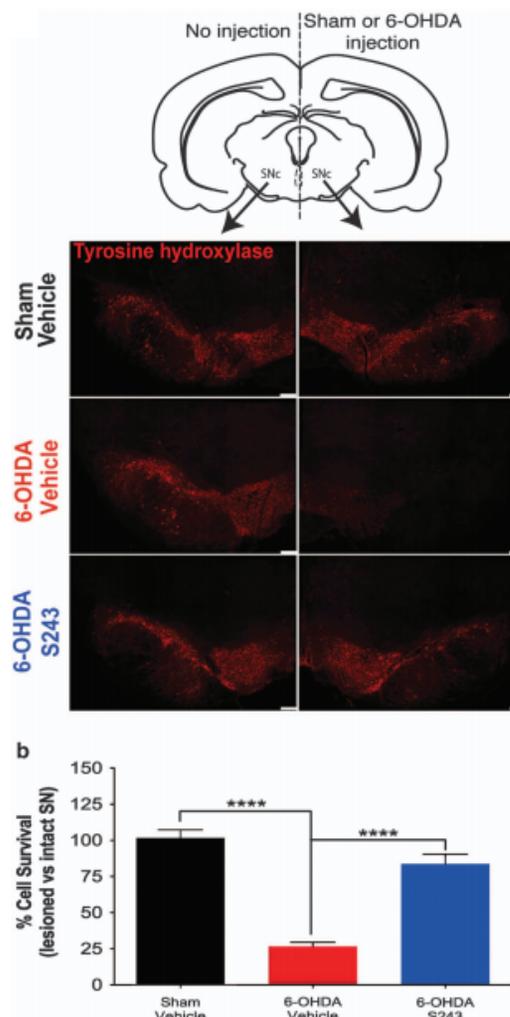
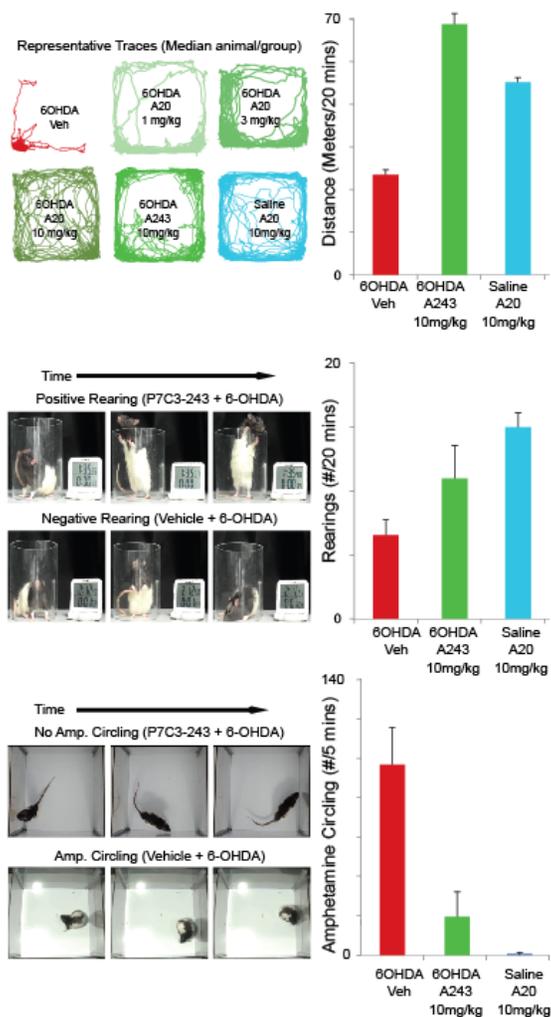
New approaches to Parkinson's disease



Adam Miller

# Neuroprotective compounds for Parkinson's disease

New approaches to Parkinson's disease



Andrew Pieper

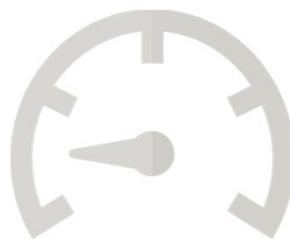
# Three problems in Parkinson's disease

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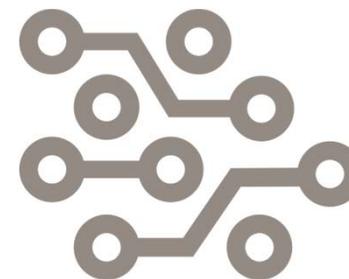
New approaches to Parkinson's disease



Early  
diagnosis



Slowing down  
the disease

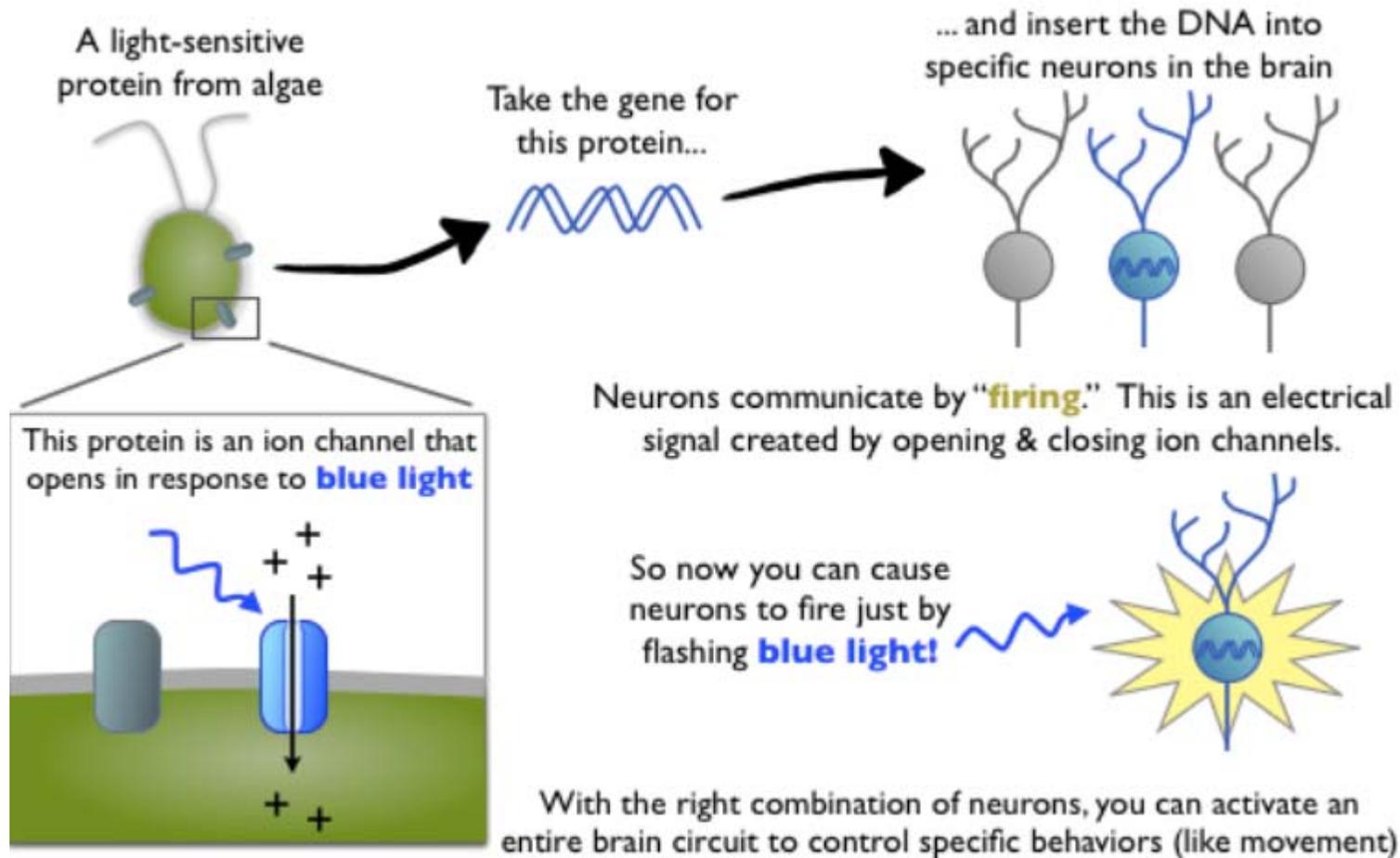


**Compensating for  
dysfunctional circuits**

# Optogenetics

New approaches to Parkinson's disease

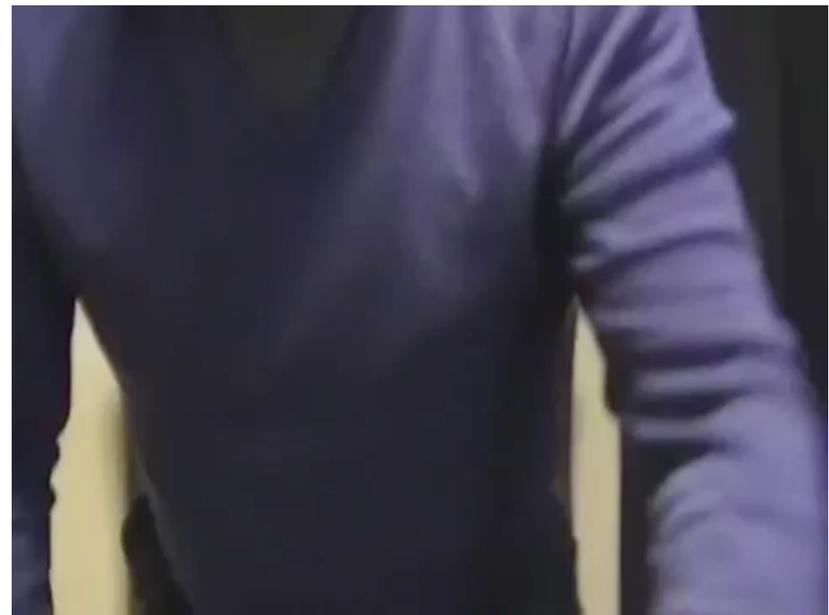
A technology for optical, specific and precise brain stimulation



# Compensating for dysfunctional circuits

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New approaches to Parkinson's disease



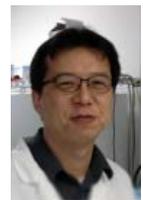
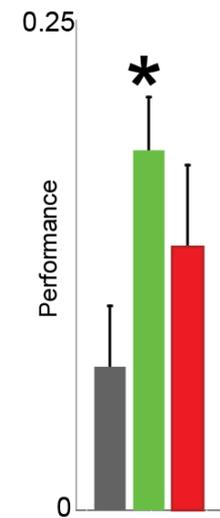
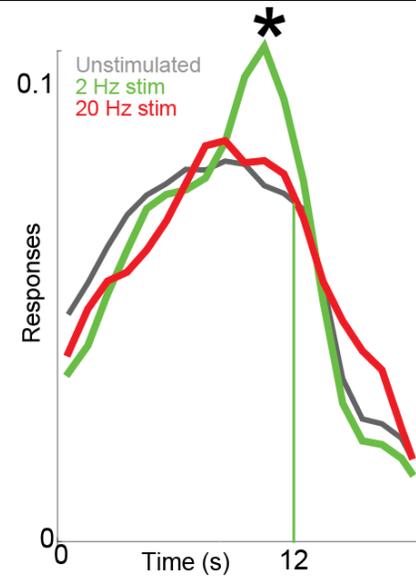
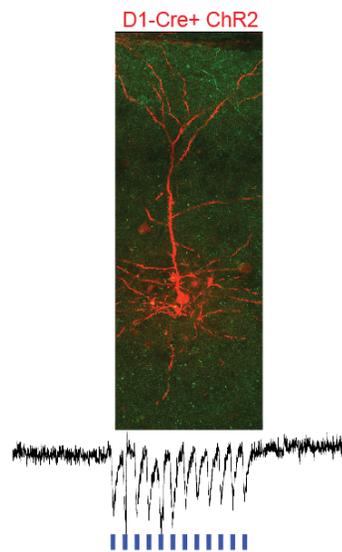
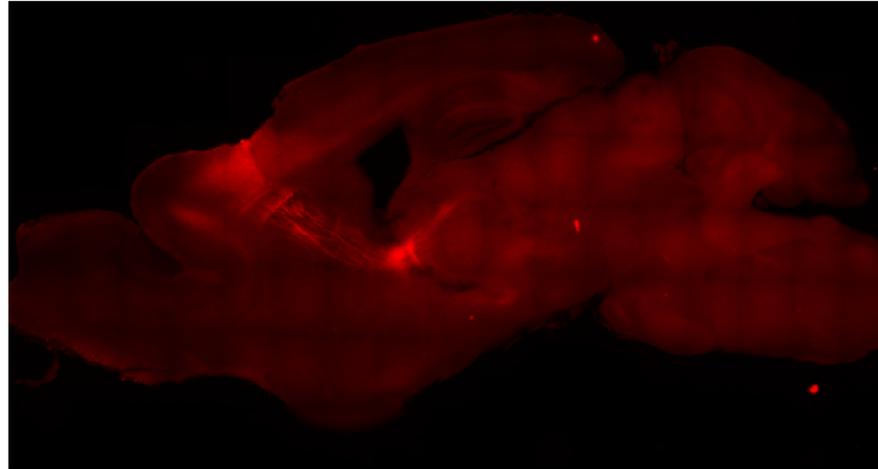
Source: <https://youtu.be/uBh2LxTW0s0>

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Can we fix ***cognitive*** symptoms of  
Parkinson's disease?

# Delta stimulation rescues performance of cognitive tasks in rodents

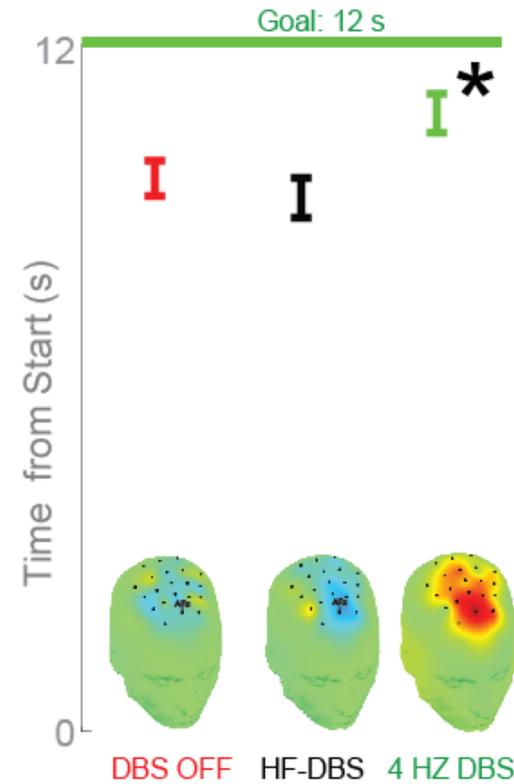
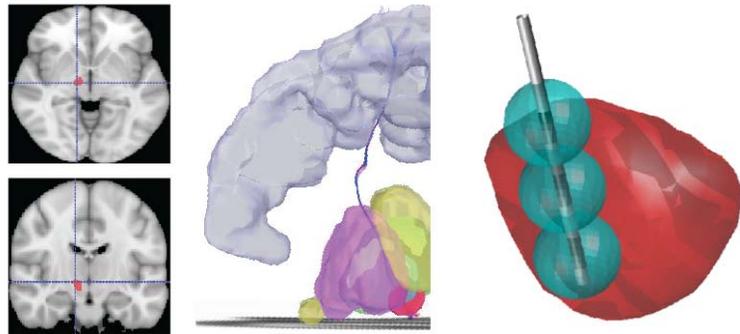
New approaches to Parkinson's disease



Youngcho Kim

# Delta stimulation rescues performance of cognitive tasks in rodents

New approaches to Parkinson's disease



Ryan Kelley



Jeremy Greenlee

# Three problems in Parkinson's disease

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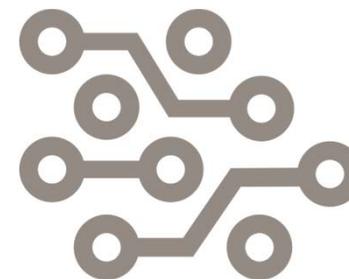
New approaches to Parkinson's disease



Early  
diagnosis



Slowing down  
the disease



Compensating for  
dysfunctional circuits

# Thank you

New approaches to Parkinson's disease



- NINDS K08 / R01 (Narayanan)
- Carver Trust (Narayanan)
- Aging Mind and Brain (Narayanan)
- University of Iowa - Neurology
- Peiper Lab (UIHC) and Davidson Lab (CHOP)



## Patients, students, residents, and staff

### Narayanan Lab

- Youngcho Kim
- Stephanie Alberico
- Ryan Kelley
- Adam Miller

### University of Iowa Engineering

- Soura Dasgupta
- Fahim Anjum
- Raghu Mudumbai

### University of Iowa Health Care Neurosurgery

Jeremy Greenlee

### Iowa Neuroscience Institute

### Pappajohn Biomedical Institute



## UPDATE ON SEARCH FOR VICE PRESIDENT FOR MEDICAL AFFAIRS AND DEAN, CARVER COLLEGE OF MEDICINE

*Kenneth P. Kates*  
*Associate Vice President*  
*& Chief Executive Officer, UI Hospitals and Clinics*

# Thank You

University of Iowa Health Care

