

**Mount Sinai Medical Center, New York
Independent (2 year) and Integrated (6 year) Cardiothoracic Residency Programs**

PROGRAM DETAILS

1. Names of the
 - a. Program Director: David H. Adams, MD
 - b. Chairman of the Department: David H. Adams, MD
 - c. Chief of Thoracic Surgery: Raja Flores, MD
 - d. Associate Program Director: Joanna Chikwe, MD

2. Program Contact information: Denise Galeano (Residency Coordinator)
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 Mount Sinai Medical Center
 Department of Cardiothoracic Surgery
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3. Link to your program's website:
<http://www.mssm.edu/departments-and-institutes/cardiothoracic-surgery/programs-and-services/cardiothoracic-surgery-residency>

4. Indicate the # of residents accepted per year to your program:
 - Independent (2 year): 1 (average number of applicants around 30)
 - Integrated (6 year): 1 (average number of applicants >100)

5. Does your program have separate cardiac and thoracic tracks? Yes
 - a. if yes, how many positions are there in each?
 Integrated and independent residents may be either cardiac or thoracic track; there is no quota

6. Indicate the approximate deadline for application and interview dates:
 - Deadline: According to ERAS each year
 - Interview dates: Independent (March / April), Integrated (December / January)

CASE VOLUME

1. Please indicate the average number of cases per year per resident performed in your program for the following ABTS categories:

All residents in the last 5 years have graduated with case numbers in all categories comfortably in excess of (and in several cases several multiples of) ABTS requirements.

	Total Institution Cases	Total Cases per Resident
Total number of cardiac cases:	1400	200
Total number of thoracic cases:	900	200
Congenital heart disease:	300	100
Acquired valvular heart:	1000	150
Valve repairs:	500	100
Myocardial Revascularization:	300	150
Aorta:	300	150
Pneumonectomy, lobectomy, segmentectomy:	300	150
Esophagus resection:	100	50
Benign Esophageal Disease:	200	100
Heart transplants:	40	20
Lung transplants:	0	0
Ventricular assist device:	50	25
Minimally invasive cardiac:	100	50

CURRICULUM

1. Details of curriculum:

a. Indicate the # of months on each rotation for each year (for each cardiac and thoracic track if applicable), and which hospital(s):

- **Independent (2 year) Program schedule:** This depends on whether residents are thoracic or cardiac track. All residents start with 2-4 weeks on the cardiothoracic ICU depending on their previous ICU experience. The program is then split into three 7-8 month blocks.

Cardiac Track

Year 1	CSICU 2-4 weeks	Adult Cardiac Surgery 7 months	General Thoracic Surgery (4 months)
Year 2	General Thoracic Surgery (4 months)	Adult Cardiac surgery 8 months	

All rotations at Mount Sinai Medical Center, New York

Thoracic Track

Year 1	CSICU 2-4 weeks	General Thoracic Surgery 7 months	Adult Cardiac Surgery (4 months)
Year 2	Adult Cardiac Surgery (4 months)	General Thoracic Surgery 8 months	

All rotations at Mount Sinai Medical Center, New York

- **Integrated (6 year) Program schedule:** Please see block schedule on page 4

b. Please describe any opportunities for electives

- **Independent Program:** We’ve previously organized 3-month electives at other institutions for residents to pursue subspecialty interests, and consider this on a case-by-case basis.
- **Integrated Program:** Electives are built in. Residents can choose to spend the last 6 months of their final year specializing in an area of their choice, either at Mount Sinai (mitral valve repair, aortic surgery, heart failure surgery, congenital surgery, interventional cardiology, TAVI), or spend time at other institutions with approved residency programs.

c. Please describe any wet labs and simulation technology used in training and how frequently these are used:

Wet labs are an important component of the teaching here. We run regular wet labs, focusing on coronary revascularization, aortic and mitral valve surgery, tricuspid repair, and ablation, and we’ve used cadaver models for high fidelity simulation of incisions, cannulation and aortic surgery. There are dedicated high fidelity human simulators available for teaching surgical emergencies, resuscitation scenarios and TEE, mainly utilized by the Integrated Program residents.

d. Please briefly describe the number and type of weekly conferences residents are expected to attend:

- Core Curriculum: July – August, 1 hour daily lectures, tutorials and wet labs
- Weekly Multidisciplinary Cardiac Surgery Conference
- Weekly Thoracic Surgery Multidisciplinary Conference
- Weekly Cardiac Surgery Grand Rounds
- Weekly Thoracic Surgery Grand Rounds
- Fortnightly Joint Cardiac Surgery and Cardiology High Risk Case Conference
- Monthly Morbidity and Mortality Meeting
- Monthly Thoracic Core Curriculum and mock oral boards
- Every 2 months wet lab

- e. Please indicate what provisions are made for attending national research meetings (i.e., # per year for which funding is provided, and if that is dependent on presenting an abstract):

Travel, accommodation and registration for one major meeting (usually the STS or the AATS) is covered for each resident, as well as a Board Review Course (usually Utah) in the Chief year. Any major meetings that the resident is presenting at are also covered in addition to this.

- f. Please describe opportunities for research (clinical, basic science):

There is a strong emphasis on high quality research. Residents are encouraged to identify a faculty mentor within their particular area of interest from research groups which include:

- Clinical outcomes research in the Department of Cardiothoracic Surgery where 7 faculty members have focused expertise, and the Department of Health Policy where national datasets are housed under the mentorship of a team of 50 full-time epidemiologists and biostatisticians with specific interest in cardiovascular outcomes.
- Residents with a specific interest in gaining expertise in clinical trials partner with the Department of Health Policy, and hence the Cardiothoracic Surgical Trials Network in ongoing national trials
- There are currently opportunities throughout the Cardiovascular Institute and Cancer Center to participate in basic science research

- g. Please describe the call structure (i.e., frequency, in-house vs. home call):

- 1:6, in-house, week of nights on adult cardiac surgery.
- 1:2 back-up call from home, on thoracic surgery.

- h. Please indicate whether funds are provided for loupes? Textbooks? Phones?

Funding is provided for loupes, textbooks (usually one of the resident's choice per year), and Blackberrys. There is an accommodation allowance.

2. Subjective:

- a. Please describe your program's biggest strengths:

- Faculty of genuinely international stature in their fields, committed to training, and who are exceptional teachers inside and outside the operating room.
- Phenomenal case-mix at one of the highest volume programs.
- The opportunity to spend 4-6 months working on each service, spending 4 or 5 days a week in the operating room, selecting cases according to training needs.
- Very hardworking, collegiate and fair ethos.
- Exceptional clinical outcomes research opportunities.
- 100% of recent graduates (last 5 years) have obtained academic or private practice attending positions directly from the residency program, without needing additional fellowship experience.
- Superb facility in a great location.

- b. Please provide 1-2 adjectives that describe your program: Academic, high-volume cardiac and general thoracic surgery program

- c. Please indicate what is unique about your program relative to other programs:

We offer outstanding volume and quality of operative training not just in general adult cardiac and thoracic surgery, but in complex mitral repair, aortic surgery, heart failure surgery, TAVI, and minimally invasive thoracic surgery, which attracts graduates from thoracic residency programs from around the US, Canada and Europe. We serve one of the most diverse populations in the US, in the setting of an academic center ranked within the top 3 nationally for NIH funding.

GRADUATES

1. Indicate the percentage of graduates that do further training:

In the last 5 years 100% of our graduates have secured cardiothoracic attending positions directly from our program, without additional fellowship training.

2. Indicate the percentage of graduates that pursue academics vs. private practice:

Of these graduates 80% are in academic practice, and 20% are in private practice.

3. Please provide an account of job placement for your graduates over the last 3 years:

- 2011: Academic practice, General Thoracic Surgery Assistant Professor, direct from residency
- 2010: Academic practice, Cardiac Surgery Assistant Professor, direct from residency
- 2009: Private practice, Attending Cardiothoracic Surgeon, direct from residency

4. Please describe “super” fellowship opportunities (e.g. transplant, endovascular, minimally invasive, congenital) available at your institution:

At any time we have 3 or 4 “super-fellowship” positions, which are usually filled 1-2 years in advance, by candidates with specific specialty interest in academic cardiac or thoracic surgery. The cardiac super-fellowships are generally tailored to individual needs and skills, and can cover complex mitral repair; aortic root and thoracic aortic surgery; heart failure surgery; and TAVI. The general thoracic superfellowship focuses on minimally invasive thoracic surgery.

JOINT THORACIC/GENERAL SURGERY (4+3) and INTEGRATED PROGRAMS (16)

Please only fill this out if your program already has an approved 4+3 or integrated program

1. Please indicate the # of residents accepted per year: 1
2. Please indicate the year of your first entering class: 2009
3. Details of curriculum:
 - a. Please indicate the # of months on each rotation for each year, and which hospital. Please feel free to send as an attachment your rotation block diagram:

Block Schedule for 6 Year integrated Program for Cardiothoracic Surgery at MSH							
Year	Year 1	Year 2	Year 3		Year 4	Year 5	Year 6
Month							
1	CTICU	Vasc Surg	IR / IC	Thoracic	CTS	CTS	CTS
2	CTICU	Vasc Surg	IR / IC	Thoracic	CTS	CTS	CTS
3	CTICU	CTS (Engl)	IR / IC	Thoracic	CTS	CTS	CTS
4	CTS	Gen Surg	Endovascular	Thoracic	CTS	CTS	CTS
5	CTS	Gen Surg	Endovascular	Thoracic	CTS	CTS	CTS
6	Anesthesia*	Gen Surg	Endovascular	Thoracic	CTS	CTS	CTS
7	Gen Surg	Thoracic Surg	CTS		Peds CTS	Thoracic	6 months elective e.g.: CTS Peds CT Thoracic VAD/Transplant Endovascular CTICU
8	Gen Surg	Thoracic Surg	CTS		Peds CTS	Thoracic	
9	Gen Surg	Thoracic Surg	CTS		Peds CTS	Thoracic	
10	Gen Surg	Thoracic Surg	CTS		Peds CTS	Thoracic	
11	Gen Surg	Thoracic Surg	CTS		Peds CTS	Thoracic	
12	Gen Surg	Thoracic Surg	CTS		Peds CTS	Thoracic	

Key to block schedule	
Englewood Hospital	12 months
CTS – Cardiac Surgery	39 months total +/- 6 month elective
CTICU - Cardiothoracic ICU	2 months + 6 weeks cardiac anesthesia and 2 weeks perfusion
General Surgery	12 months
Thoracic Surgery	9 months +/- 6 months PGY3 elective, +/- 6 months PGY6 elective
IR / IC – Interventional radiology and cardiology	3 months
Endovascular surgery	3 months
Anesthesia	Cardiac and thoracic, including perioperative TEE, perfusion

b. Please indicate whether research time is included in the curriculum. Is this optional or required?

The Integrated Program allows for an optional 1-3 year block of mentored full-time research to be taken during the program, and has been structured so that interested residents can take the insitiutional taught PhD course in biostatistics and research methodology.

c. Please briefly describe what exposure students will receive to fields adjunct to CT surgery (i.e., echocardiography/cardiac imaging, cardiology, ICU, endovascular technology):

- Echocardiography is covered initially in a 6 week block in the first year, when residents rotate through anesthesia and spend dedicated time learning transesophageal echocardiography.
- Cardiac imaging (invasive and non-invasive) is taught during a 3 month block in the third year (cardiac track residents only).
- Endovascular surgery forms a 3 month block immediately after this. Residents can elect to spend a 6 month elective on our TAVI program on their final year.

4. Please provide additional relevant comments:

The following residents can be contacted for informal enquiries:

Integrated Program:	Aaron Weiss (July 2010) aaron.weiss@mountsinai.org
Independent Program (Thoracic Track):	Mark Shapiro (July 2010) mark.shapiro@mountsinai.org
Independent Program (Cardiac Track):	Mitsuko Takahashi (July 2009) mitsuko.takahashi@mountsinai.org