

Robotic Surgery Curriculum Recommendation for Residents and Fellows 2022-2023

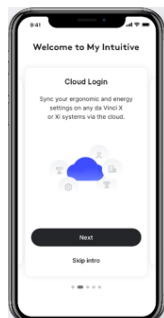
Amir Bastawrous, MD, MBA
Swedish Colon and Rectal Clinic

Robert Cleary, MD
Trinity Health

Mark Soliman, MD
AdventHealth

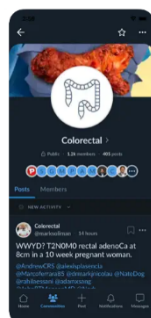
Robotics Curriculum Pathway Overview

Phase 1: Technical Development



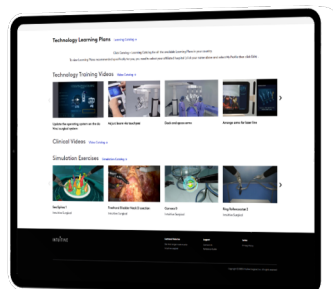
1. Track Your Robotic Case Experience

The My Intuitive App will allow you to log and review all your robotic cases via Cloud Login, and to access e-learning content.



2. Network with Mentors and Other Fellows

SurgeOn, YouTube, Facebook and others have opportunities for a rich community of colorectal surgeons and a private community for trainees.



3. Online Technical Training

Complete the Xi Multiport System Fundamentals for Resident/Fellow learning plan on Intuitive Learning (<https://learning.intuitive.com>)



4. Hands-on Technical Training

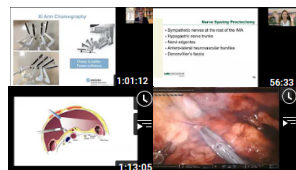
Complete an individual or group hands-on da Vinci system training with the Intuitive clinical representative at your hospital.



5. Simulation Training

Complete *all* SimNow technical skills simulations with a score of 90% or better. Then complete the three procedural sims at right.

Phase 2: Clinical Development



6. APDCRS Webinar Series

View the APDCRS Webinar Series, which consists of 10, one-hour clinical lectures taught by APDCRS faculty.



7. Build Console Experience

Build clinical experience via dual console teaching cases, with progressively increasing responsibility.

Suggested Clinical Experience

- Right colectomy with ICA
- Left colectomy
- Transverse colectomy
- Total colectomy
- Hemicolectomy
- Sigmoidectomy
- Small bowel resection
- Rectopexy
- Intersphincteric resection
- Low anterior resection
- Total mesorectal excision
- Abdominoperineal resection



8. Review Case Video

Review your case video using a media manager such as Intuitive Hub. Strategize on improvements for subsequent cases.



9. Earn Your Training Equivalency Certificate

Complete this curriculum and your local robotic training requirements to earn a Certificate of Equivalency Training in Robotic Surgery prior to graduation.

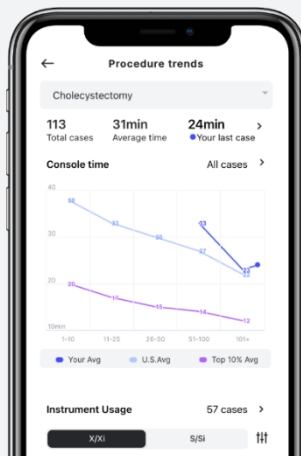
1. Track your Robotic Case Experience Automatically



The My Intuitive App allows you to automatically log and track your case experience when used in conjunction with Cloud Login. Each logged case includes the ability to review the case time and time, your console times and instrument choreography, and the portion of the case performed on each of the da Vinci Surgeon Consoles (in a dual-console setup). Additionally, the My Intuitive app provides fellows with access to technical and clinical videos and learning plans that can be used to prepare for hands-on case experience.

Track case metrics trends

Every case performed on a da Vinci system will automatically capture metrics that can be used to better understand your total and average console times, comparison to U.S. case averages, and instrument usage compared to other surgeons



Log robotic cases automatically

All single and dual console cases are logged by procedure, creating a robotic training record that allows you to track your clinical experience and supplements other case logging requirements.

Get started with case tracking

Step 1: Download My Intuitive to your phone:



<https://apps.apple.com/us/app/my-intuitive/id1498818054>



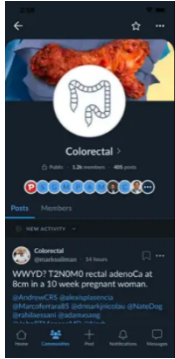
https://play.google.com/store/apps/details?id=com.intuitive.myintuitiveapp&hl=en_US&gl=US

Step 2: Set up your Cloud Login profile by visiting <https://my.intuitive.com> and selecting "Surgeon Sign Up"

Step 3: Select one of the available session times and attend the 15-minute setup session to activate your Cloud Login account

Step 4: Begin using Cloud Login to log into the da Vinci console for every case. Your cases will automatically appear in the My Intuitive app at the end of every case.

2. Network with Mentors and Other Fellows



SurgeOn is an application available for iOS, Android, and web that connects surgeons from all subspecialties to help them learn, network, and share knowledge using a purpose-built, private, and fully encrypted social media platform. Built for surgeons by surgeons, SurgeOn is centered around the unique needs and demands of the surgical patient / profession.

For colorectal trainees, SurgeOn offers a private community where you can ask question, seek mentorship, upload surgical videos, and network with your peers and with APDCRS faculty. We encourage all colorectal trainees to download SurgeOn using the instructions below and to use it to support your career development. In addition to the community feature, SurgeOn will also provide access to colorectal webinars and other learning tools that can help support your clinical training in colorectal surgery.

Get started with the SurgeOn App

Step 1: Download SurgeOn to your phone:



<https://apps.apple.com/us/app/surgeon-surgery-unified/id1524410956>

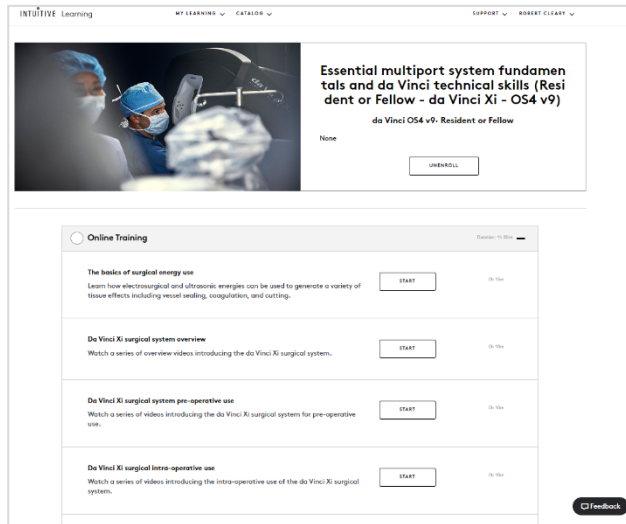


https://play.google.com/store/apps/details?id=com.surgeon&hl=en_US&gl=US

Step 2: Log into the app by selecting the Intuitive Single Sign On option and entering the same login information as you use for the My Intuitive App

Step 3: Once you have logged in, tap on the Communities icon at the bottom of the app and join the Colorectal community.

3. Online Technical Training



Technical training on the da Vinci Surgical System starts with a solid understanding of the fundamentals principles of operation of the system. This includes becoming familiar with the system controls, pedals, wristed instruments, patient-side cart, vision cart, surgeon console, surgical energy use, and troubleshooting.

The APDCRS recommends completion of the "Essential Multiport System Fundamentals and da Vinci Technical Skills (for Residents and Fellows)", which can be found on the Intuitive Learning online web site. This multi-part online training program will provide instruction on the pre-, peri-, and post-operative use of the da Vinci system, and will culminate with an online assessment that will measure your understanding of the principles of operation of the da Vinci system. A score of 80% or more is required to pass the Online Assessment.

Enrolling in the Essential Multiport System Fundamentals and da Vinci Technical Skills Learning Plan

Step 1: Visit Intuitive Learning at <https://learning.intuitive.com>

Step 2: If you have not already done so, create an account on the login screen

Step 3: Once logged in, scroll down to Learning Plans on the home page and select Learning Catalog

Step 4: From the drop-down menu, select "da Vinci Xi" from the System menu, "da Vinci OS4 v9" from the Software menu, and "Resident or Fellow" from the Roles menu.

Step 5: Select the "Enroll" button on the "Essential Multiport System Fundamentals and da Vinci Technical Skills (Resident or Fellow)" learning plan to enroll and begin the learning plan.

4. Hands-On Technical Training



If you have not done so already, a critical step in your robotic surgery learning pathway is to take part in a formalized hands-on training session with your Intuitive clinical representative. During this session, you will take the principles of operation of the da Vinci system that you learned as part of the online didactic training and translate that learning into practical use of the da Vinci system. You will learn both bedside and console skills, allowing you to understand all aspects of a robotic surgery case.

To schedule a hands-on technical training session, please reach out to your hospital Intuitive representative.

The following topics will be covered during your hands-on training:

Table of Contents

- | | |
|--|---|
| ① System Component Overview | ⑥ Intraoperative Setup and Use |
| ② Patient Cart Overview | ⑦ Surgeon Console Interaction |
| ③ Instruments and Accessories Overview | ⑧ Troubleshooting |
| ④ Port Placement and Docking | ⑨ Successful Implementation of da Vinci Surgery Program |
| ⑤ ERBE VIO® dV Generator | ⑩ Da Vinci Case Walkthrough |

5. Simulation-based Training



Simulation skills training provides you with an opportunity to refine the technical and procedural skills that you will use in the operating room, all while affording you the opportunity to practice with repetition in a benign environment. The APDCRS recommends that you master each of the following simulation skills exercises with a score of 90% or better as part of your fellowship training. Each of the exercises below can be found on the SimNow simulator backpack (please work with your local Intuitive representative to identify equivalent exercises if you have a legacy simulator).

	EndoWrist Manipulation	Camera Clutching	Master/Finger Clutching	Energy Control	Fourth Arm Control	Needle Control and Driving	Dissection or Knot Tying
Simulation Exercises							
30-Degree Scope Swap	○	●					
Sea Spikes 1	●						
Sea Spikes 2	●						
Sea Spikes Game	●						
Three Arm Relay 1	○	○	○		●		
Three Arm Relay 2	○	○	○		●		
Three Arm Relay 3	○	○	○		●		
Energy Pedals 1				●			
Energy Pedals 2				●			
Posterior Needle Driving ATW						●	
Anterior Needle Driving Horizontal						●	
Anterior Needle Driving Vertical						●	
Anterior Needle Driving ATW						●	
Combo Exercise	●	●	●	●	●	●	
Instrument Playground	●	●	●	●		●	

EndoWrist Manipulation	Camera Clutching	Master/Finger Clutching	Energy Control	Fourth Arm Control	Needle Control and Driving	Dissection or Knot Tying
---------------------------	---------------------	----------------------------	-------------------	-----------------------	-------------------------------	-----------------------------

Basic Skill Set

Camera 0		●	○			
Wrist Articulation 1	●		○			
Wrist Articulation 2	●	○	○			
Clutch			●			

Skills Drills

Ring Roller Coaster 1	●	○	○			
Ring Roller Coaster 2	●	○	○			
Ring Roller Coaster 3	●	○	○			
Ring Roller Coaster 4	●	○	○			
Ring Roller Coaster 5	○	○	○			
Around the World Needle Driving					●	
Big Dipper Needle Driving					●	
Running Suture					●	●

Fundamentals of Robotic Surgery

Ring Tower Transfer	●					
Knot Tying						●
Railroad Track					●	
4th Arm Cutting						●
Puzzle Piece Dissection	○		○			●
Vessel Energy Dissection				●		

Simulation Training: Procedural Simulations and Videos

	Procedure	Guided	Non-Guided	Instrument Exchange	Energy Use	Dissection	Knot Tying	Anatomy ID
CRO Right Colectomy with ICA								
RH: Anatomy Identification	●		●		●	●		
RH: Guided Intracorporeal Ileocolic Anastomosis	●				●	●		●
RH: Intracorporeal Ileocolic Anastomosis	●	●			●	●		●
Guided Closure of the Common Enterotomy – Top Down Technique		●	●		●	●		●
Guided Closure of the Common Enterotomy – Bottom Up Technique		●	●		●	●		●
Closure of the Common Enterotomy		●	●		●	●		●

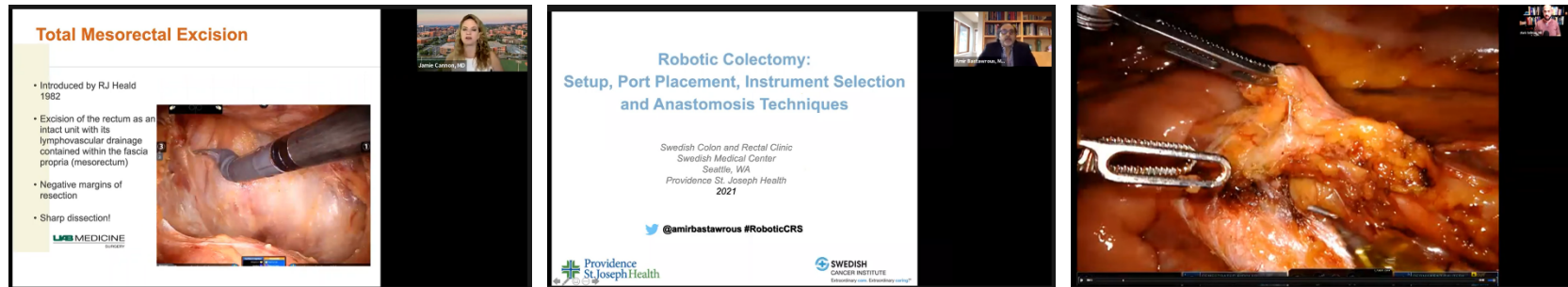
3DHD Clinical Videos

dVAPR: Anterior Dissection Clip 1 (Pigazzi)

dVAPR: Anterior Dissection Clip 2 (Pigazzi)

dVAPR:Posterior Dissection Clip 1 (Pigazzi)

6. Virtual Training with the APDCRS Webinar Series



The APDCRS Robotic Fellowship Training Pathway faculty have created a series of one-hour virtual webinars that support trainees as they expand their clinical armamentarium. These webinars cover topics ranging from port placement and docking to total mesorectal incision to low anterior resection and are updated annually as our faculty record and webcast additional webinars.

We encourage all trainees to view these webinars, which can be accessed using the instructions below:

Accessing the APDCRS Virtual Webinar Series

Step 1: Visit APDCRS web site to access the current list of available webinars at <http://www.apdcrs.org/wp/resident-resources-2/robotic-colorectal-surgery-curriculum/robotics-training-videos-and-curriculum-material/>

Step 2: We recommend starting with “Webinar 1: Robotics Colectomy Setup Port Placement Instrument Selection” to understand the basic technical considerations for colorectal robotic surgery before moving on to the clinical videos.

Step 3: View each of the clinical lectures, ensuring that you allocate ample time to understand the techniques and clinical pearls that are shared by the faculty.

Step 4: To be notified when new lectures are uploaded, please visit the APDCRS YouTube channel at https://www.youtube.com/channel/UCpQRaDzfF_jarU9j8JNt16Q and select the red “Subscribe” button.

7. Build Robotic Clinical Experience



At the core of your robotic fellowship training journey is the experience that you will gain across the spectrum of colorectal cases. The APDCRS recommends that you seek out opportunities with fellowship faculty to expand your clinical experience on the da Vinci system by taking part in as many of the procedures listed below as possible during your fellowship year (**the APDCRS recommends a minimum of 30 console robotics cases during which you perform > 50% of the case**).

Wherever possible, leverage the use of a dual console setup to facilitate learning. As you gain experience and confidence with each procedure, your teaching faculty will transition increasing levels of responsibility for the case to you while mentoring you from the second console.

	Procedure Type	# Bedside Cases	# Console Cases
<input type="checkbox"/>	Right colectomy (with intracorporeal anastomosis)		
<input type="checkbox"/>	Left colectomy		
<input type="checkbox"/>	Transverse colectomy		
<input type="checkbox"/>	Total colectomy		
<input type="checkbox"/>	Hemicolectomy		
<input type="checkbox"/>	Low anterior resection		
<input type="checkbox"/>	Total mesorectal excision		
<input type="checkbox"/>	Sigmoidectomy		
<input type="checkbox"/>	Small bowel resection		
<input type="checkbox"/>	Rectopexy		
<input type="checkbox"/>	Intersphincteric resection		
<input type="checkbox"/>	Abdominoperineal resection		

8. Review Your Case Video with a Mentor



As you progress through your robotic surgery training, capturing your case video for post-operative review will provide you with a great way to identify procedure steps for which you require additional practice, and to strategize on how you might perform a case differently in the future.

Where possible, the APDCRS recommends recording all your cases and spending time reviewing the cases on your own and with your program faculty. There is a wide variety of recording solutions available depending on your OR setup. The step-by-step below assumes that you have access to the native Intuitive Hub Media Manager on your da Vinci System.

Recording your case using the Intuitive Hub Media Manager

Step 1: Prior to the start of the case, ask your OR staff to enter the patient's medical record identification number into the Intuitive Hub touchscreen, located on the Vision Cart.

Step 2: The case will automatically start recording when the illuminator on the da Vinci endoscope is turned on.

Step 3: During the case, "bookmarks" will automatically be added to the video whenever a major event takes place (Firefly activation, energy instrument activation, instrument swap, etc.) Should you want to deliberately create a bookmark for an interesting moment, press the Camera icon on the Surgeon Console touchpad or on the Vision Cart touchscreen, or ask your OR staff to press the camera button on the endoscope.

Step 4: At the end of the case, the case video will automatically be stored on your hospital's media server and can be accessed via the My Intuitive Web interface from your computer.

9. Earn Your Robotic Certificate of Equivalency Training



As you grow your colorectal robotic skills as part of your fellowship program, your robotic training is mirroring the process that a mid-career surgeon might undertake if they were learning robotic surgery for the first time. When you complete your fellowship and seek employment, you may find that the hiring hospital is interested in learning more about your da Vinci system experience.

To help fellows communicate this information in a more uniform way, Intuitive has established a Certificate of da Vinci System Training for qualifying residents and fellows. This certificate takes into account your completion of didactic and hands on technical training, as well as the clinical experience imparted upon you by your training program, granting you a certificate of equivalency training that can be shared with prospective employers to convey your robotic training in fellowship.

Steps for Earning Your Robotic Certificate of Equivalency Training

Step 1: Complete your da Vinci online training by visiting Intuitive Learning (<https://learning.intuitive.com>) and completing the “Essential Multiport System Fundamentals and da Vinci Technical Skills (for Residents and Fellows)” learning plan (see Part 3 of this curriculum)

Step 2: Complete hands-on in-service technical training with the Intuitive clinical representative at your hospital.

Step 3: Confer with your Program Director and determine the number of bedside and console cases that must be completed (with the trainee completing more than 50% of the case) in order to be classified as robotically trained by your program.

Step 4: Submit a signed letter from your program director (on hospital letterhead) attesting that you are robotically trained per the requirements of your program, along with a copy of the certification of completion from the “Essential Multiport System Fundamentals and da Vinci Technical Skills” online assessment to Academic.Programs@intusurg.com

Curriculum Contact Information

APDCRS Fellowship Course Directors

Amir Bastawrous Amir.Bastawrous@Swedish.org

Robert Cleary Robert.Cleary@stjoeshealth.org

Mark Soliman Mark.Soliman.MD@AdventHealth.com

Questions regarding Intuitive Surgical technology

Craig Cocca Craig.Cocca@Intusurg.org