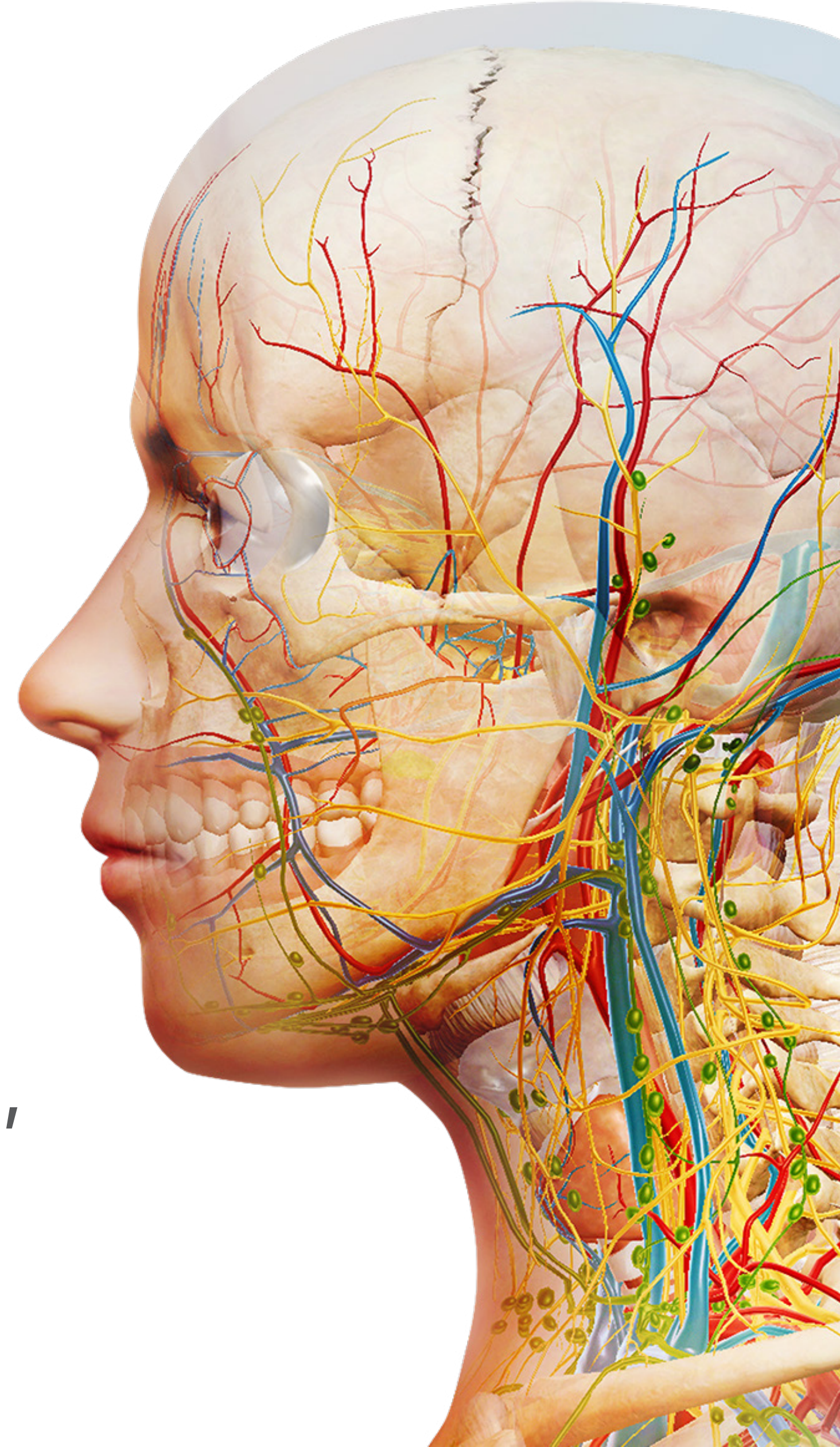


VISIBLE  BODY®

# Teaching A&P to today's students:

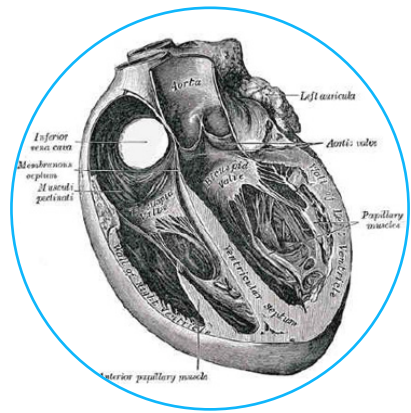
140 instructors share their insights,  
questions, and plans





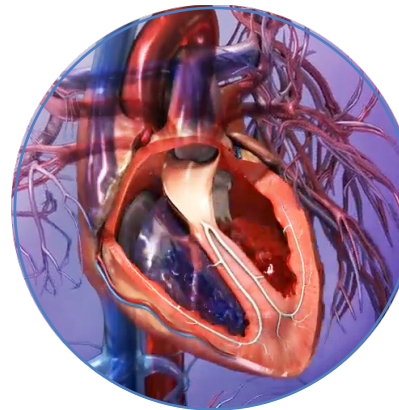
# It's a challenge to see inside the human body.

Anatomy education has always been concerned with visuals that improve understanding.



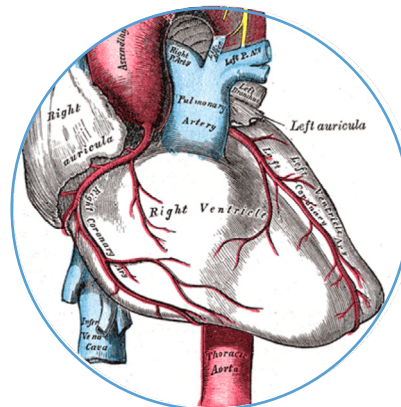
## 16th century

*On the Fabric of the Human Body*, with illustrations based on dissections, by Dr. Andreas Vesalius



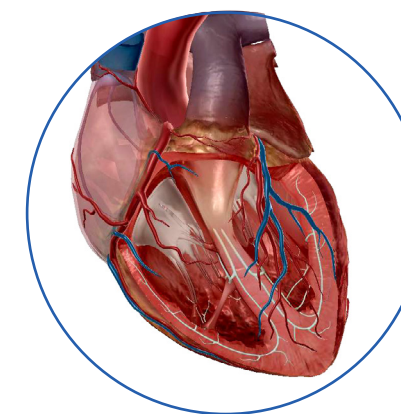
## 20th century

With the advent of 3D modeling programs, medical art begins to move from the 2D look of the famous illustrations by Frank Netter to a 3D look.



## 19th century

Physicians at Johns Hopkins Medical School recruit Max Brödel to create educational illustrations.



## 21st century

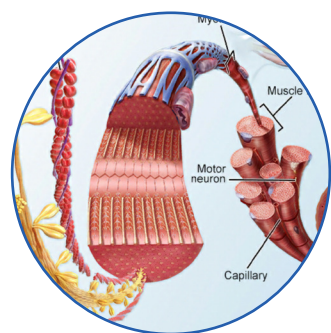
As powerful computers become affordable and mobile phones and tablets gain popularity, instructors can use 3D anatomy models on their desktops, iPads, iPhones, and Androids

# 5 Trends, challenges, and opportunities

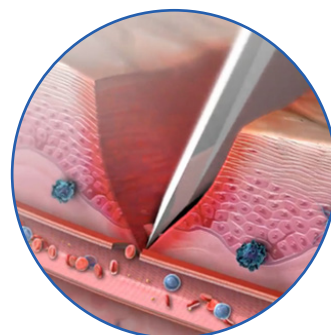
We asked A&P instructors about the trends, challenges, and new tools they are considering for their classes.

**Here is what 140 instructors shared:**

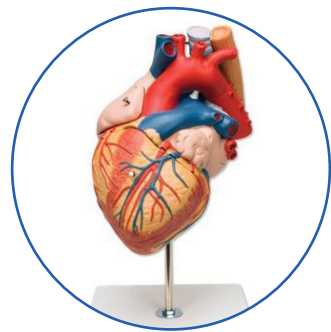
# 1. Instructors use a variety of visual resources



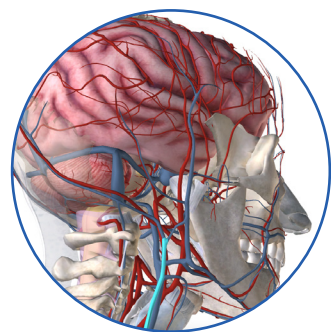
**Static images**  
*(diagrams, drawings, charts, scans)*



**Videos and animations**



**Physical models/cadavers**



**3D models**



## 2. Students show a strong preference for visuals and new technology

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"Visual and interactive content has become more important."

- Rowan-Cabarrus Community College

"Students REALLY appreciate the resources that make things visual (and accessible)."

- College of the Redwoods

"Visual content has become very important both in the classroom and for the students to study when they are not in the classroom. I hear the students talking about the different apps or YouTube videos that they use to study. I would like to have the students rely on one visual/interactive app or website instead of ten different ones."

- Marion Technical College

"The majority of **students now have visual processing as their primary learning system**, so augmenting auditory instruction with visuals is key."

- Portland Community College

"Having user friendly **visuals and more interaction makes the class more enjoyable and students have a better outcome.**" - The Citadel

"**This generation of learners is used to information at their fingertips**—mainly through visual media."

- Daemen College

### 3. Students are moving away from textbooks

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"I have students now who bring laptops to class and pull up their own images because they don't like the ones the publisher supplies us."

- *College of Western Idaho*

**"Students will more often Google something on their phone than look it up in the book."** I really think we will be moving more and more away from 'traditional' books to searchable content on the web."

- *Jeffery Overholt, Ph.D., Winston-Salem State University*

"Students expect to have interactive content in the classroom.

**Many of the students are coming to university after having utilized iPads in high school."** - *Barry University*

**"Students are unlikely to purchase textbooks**

I would imagine this trend will continue and students will continue to look online for content." - *University of Vermont*

"Students use their cell phones to look up information. Textbook use has decreased."



## 4. Technology like Visible Body's can help instructors and students meet course goals

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**"The 3D model...  
has raised the teaching of  
A&P to a whole new level**

...understanding of A&P will be enhanced exponentially."

- Hostos Community College

**"Dramatically improves the  
student's opportunity to  
visualize anatomical**

details that they cannot envision in any other way."

- Prof. T. Austin, Temple College

**"The 3D is next level and  
gives students a deeper  
understanding than ever  
before.** I find it very exciting!"

- Houston Community College System

"We are moving from a time when apps like this were a luxury, into a time where these are required and expected. This technology is far too helpful to be simply an 'available option'." - Prof. T. Austin, Temple College

"These are phenomenal! I love how the images can be rotated. This really gives student a unique perspective of how everything fits together.

**[Students] often have difficulty imagining where deeper structures are relative to more superficial structures... this fixes that!"** - Central Texas College

"Students are different now—exposed to digital (colorful and animated) media from birth now—and don't seem to have as much skill with imagining, visualizing, and remembering anatomical 3D structures in their heads without seeing them that way first.

Perhaps this might really appeal to them and help them visualize and remember things."

- Pasadena City College

## 5. Instructors need to limit both time and investment to learn new technology and cost to student

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### Cost to student

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"I do not want to ask the students to pay more for an app or program than what they have to already pay for with their textbooks."

"I am afraid it will be too expensive. The book for A&P is already the most expensive in the book store."

"I most definitely love the idea; however I have a reservation regarding cost. Students here at my college most times can't even afford the book."

### Instructor learning curve

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"I'd like students to have access to a visual app like this. I'm worried about my OWN learning curve."

"My biggest concern is making the time to learn the operations of the program well enough that I can utilize it in lecture."

"I am not a tech savvy person...my only reservation is whether I will be able to use the app efficiently and effectively."

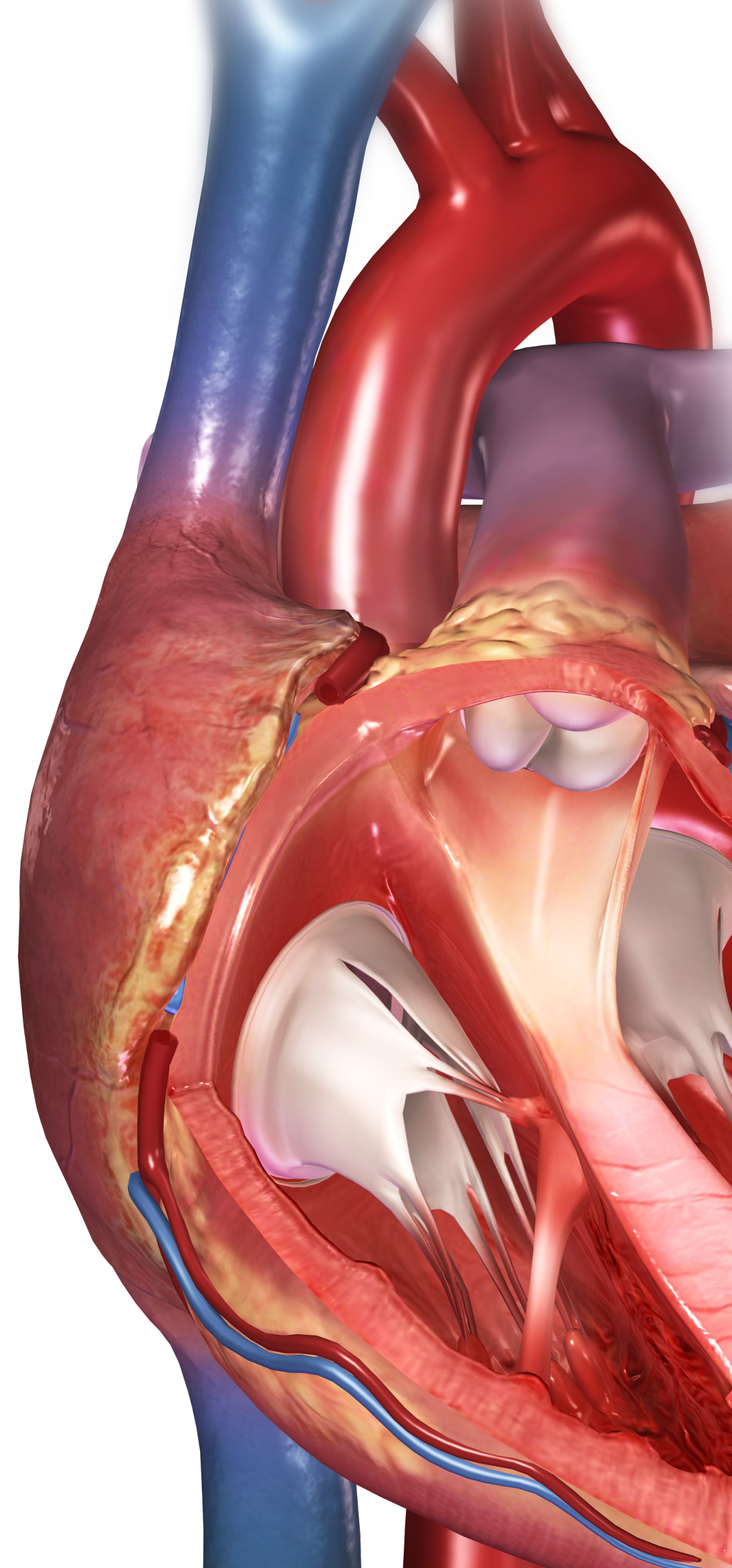
"My only reservation is that I'll have to master the app in order to use it effectively in the classroom. Unfortunately, finding the time for that will be a challenge."

"How much time would be involved in changing my labs?"



## **The 5 trends 140 instructors revealed in the survey**

- Instructors use a variety of visual resources
- Students show a strong preference for visuals and new technology
- Students are moving away from textbooks
- Technology like Visible Body's can help instructors and students meet course goals
- Need to limit both time investment for instructors to learn new technology and cost to student





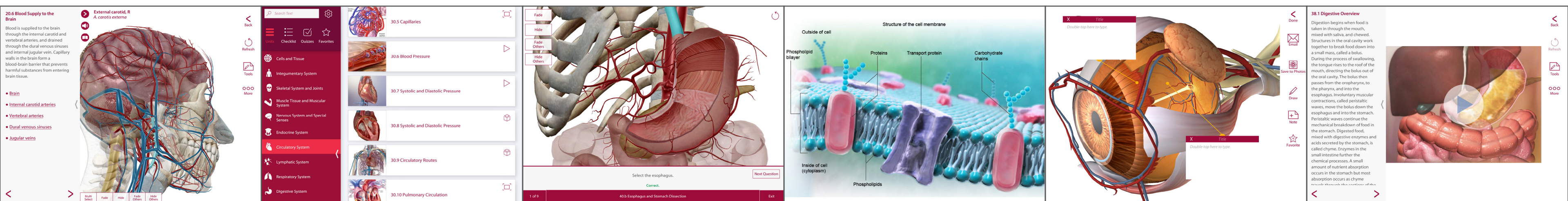
# Improve students mastery of A&P with the Visible Body Anatomy Suite

## Bring interactivity to lessons, lab, and homework

There is a lot to consider when changing the course materials in your undergraduate anatomy and physiology course. Our Visible Body apps linked with our courseware provide comprehensive anatomy and physiology content that is visual, interactive, and mobile—and includes a simple way for instructors to assign interactive lessons and quizzes that link to D2L, Blackboard, Moodle, or Canvas.

[Learn more about 3D in education](#)

[Learn about Visible Body Courseware](#)



This report was created in October of 2017 by Andra Bowditch and Maite Suarez-Rivas

**About this report:**

- In the spring of 2017, Visible Body reached out to several hundred Anatomy & Physiology college and university professors and instructors across the United States.
- Our goal was to learn about how A&P instructors currently teach and how they see their teaching evolving in the future, particularly when it comes to using interactive and 3D visualization tools in the classroom and beyond.
- 140 instructors and professors responded to our informal survey, answering our open-ended questions thoughtfully and at some length. This report highlights and summarizes the recurring themes within their responses.