iPhone and iPad Apps for radiology educators and radiology learners

Here are some Apps that you may find of use for you, your students, or residents. Thanks to Kate Klein and Bill Randazzo for complying this list (current as of 12/30/12)

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Anatomy

IMAIOS e-Anatomy (Paid subscription required)

- o Interactive human anatomy atlas designed for physicians, medical students, and radiographers based on the IMAIOS e-Anatomy online atlas. Allows the user to scrool through images, zoom in/out, and toggle labels on and off. The app itself is free but a paid online subscription is required for access.

Monster Anatomy Lite-Knee (Free)

- o Radiological knee anatomy atlas utilizing axial, coronal, and sagittal MRI images of the knee with anatomic labeling. A full version of the app is available for $18.99 and includes the entire lower limb anatomy with extensive labeling of MRI images.

Brain MRI Atlas (Free)

- o MRI atlas of the brain utilizing axial FLAIR images with anatomic labels. Color-coded labels and scrolling through axial images allows for fast interactive learning.

Draw MD ($1.99)

- o This app allows interactive labeling and drawing on anatomic images to improve discourse between physician and patient or teacher and student. Images may be saved and stored or sent via email.

iCBCT (Cone Beam CT) Anatomy ($1.99)

- o Maxillofacial and skull base anatomy is presented in the axial, coronal, and sagittal planes as well as in 3D reformatted views. This app aids in correlating normal anatomic structures on the 2D plane with the 3D image.

Radiological Anatomy (Free)

- o Radiology anatomy atlas with CT and MRI images of the head, neck, chest, and abdomen. Color labeling aids in identification of anatomic structures.

iAnatomy ($0.99)

- o CT anatomy atlas of the face, neck, chest, abdomen, and pelvis in additon to cadaveric images of the face and neck. Anatomic labels allow for fast identification with separate tabs for muscle, bone, organ, and vasculature structures. A quiz mode is also offered to test anatomic knowledge.

FRCR Radiological Anatomy ($4.99)

- o 200 exam style questions are offered to aid radiology candidates taking the Fellows of the Royal College of Radiologists (FRCR) Part 1 anatomy exam. Analytics are provided for computing test performance.

ChestAnatomy ($2.99)

- o CT images of the chest are used to demonstrate anatomy of the lungs, heart, mediastinum, vasculature, and airways. Color-coded labels aid in precise delineation for very clear identification of anatomic structures.

Color Skeletal System ($0.99)

- o Osseous strucutres are displayed with color-coded skeletal grouping and anatomic labels. Descriptions of the groups are provided by touching the color zone. Fast and easy way to correlate basic osseous anatomy with radiographs and CT.

3D4Medical's Images (Free)

- o Over 200 3D medical images are provided for demonstraion and viewing purposes. Images are static, not interactive, but great for presentations or wallpapers. Only available for the iPad.

Radiology Reference

Radlinks (Free)

- o A useful, up-to-date source of free online content for radiology education. Resources are indexed in a digital library with information organized by general categories such as radiologic anatomy, physics, and by subspecialty.

Radiology Terms (Free)

- o A searchable dictionary of radiology specific medical terms, designed for the average consumer. A great resource for patients. No Internet connection required for use.

RSNA Mobile Connect (Free)

- A mobile resource for RSNA related content including member access to myRSNA, full content of Radiology and Radiographics journals, as well as an integrated QR code reader to scan education exhibits and meeting badges. RadiologyInfo is also available through RSNA Mobile Connect, which helps to education patients about radiological procedures.

iClarity ($4.99)

- Allows remote access to iClarity PACS or other third party PACS systems for viewing of stored images. Patient lists are accessible for downloading plain radiograph, ultrasound, CT, and MRI images. Users can zoom, pan, and window/level images on their mobile device. The free version of the iClarity app is for demo purposes only and the full version is available to those with Clarity PACS or any other third party PACS.

Radiology Select (Free)

- An app that provides access to Radiology Select articles, which are published bi-annually. Each issue highlights a certain subspecialty of radiology. Podcasts, videos, and guest editor and author commentaries are included. However, CME/SAMs are not available.

Diagnostic Radiology-Dynamic Approach to Abdominal Radiology ($44.99)

- A full-length, interactive, downloadable book of abdominal imaging and abdominal pathology that allows the reader to not only learn about abdominal processes but also to scroll through image sets as if at a workstation. A free, fully functional trial version is available.

Radiology Assistant-Medical Imaging Reference & Education ($5.99)

- Based on the Radiology Assistant website, this app provides peer reviewed radiology educational material covering abdominal, breast, cardiovascular, chest, musculoskeletal, neuro, and pediatric sections focusing on common radiological findings. Over 70 articles are available in addition to image stacks for scrolling through data sets.

AIRP Syllabus 2012 (Free)

- A free app for purchasing the American Institute for Radiologic Pathology's 2012 Syllabus lectures, which are updated weekly and contain over 6500 images. More than 150 lectures are available with access to 2011 AIRP material also provided.

RadCompanion (Free)

- A practical source of useful information for radiologists and radiology residents including guidelines for contrast media administration, contrast reaction management protocols, RSNA report templates, lung and endometrial cancer staging information, and a GFR calculator.

Radiology Toolbox Lite (Free)

- A quick resource guide for common radiology related references such as pulmonary nodule management, contrast allergy premedication, GFR calculator, gastric emptying times, and radioisotope half-lives. Many more resources are available with the Pro edition ($4.99).

Radiation Passport Pro ($6.99)

- o This unique app estimates radiation dose of imaging procedures, keeps track of imaging exams performed, and provides an estimate of cancer risk based on radiation exposure. Non-medical sources of radiation exposure may also be calculated such as background radiation due to local environmental factors.

Radiopaedia ($0.99-3.99)

- o Based on the Radiopaedia website this app allows the user to go through radiology cases based on expertise. Case packs are sold individually and targeted for practicing radiologists, radiology residents (senior or junior packs), medical students, and non-radiology health care professionals. The cases are image rich and have multiple question stems associated with each as well as a concise description following the case

CT Sessions (Free)

- o This app provides access to the Siemens Computed Tomography Customer Magazine, which covers computed tomography based news. Online downloads are available, which may be read offline.

- PediatricXR (Free)
  - o An easy to use case based educational resource providing known and unknown cases in pediatric plain film radiography. Descriptions of the cases are provided with anatomic labels on the images.

Case Reviews (Case series purchased individually)

- o This app presents radiology cases in a question-answer format and is designed for the oral board examination. The free app has sample cases from brain, thoracic, spine, musculoskeletal, pediatric, head and neck, vascular and interventional, emergency, and genitourinary sections. Each subspecialty requires a separate purchase but includes nearly 500 images with legends describing the findings.

Radiology 2.0: One Night in the ED (Free)

- o Radiology cases are presented with this app simulating CT scans at a workstation with the purpose of teaching the user how to approach CT interpretation. Case discussions and labeled figures aid in the educational experience with content available offline. One Night in the ED is a specific teaching file providing common emergency room radiology cases.

MIRC Viewer (Free)

- o Allows access to the Medical Imaging Resource Center (MIRC), which is the RSNA's case based Teaching File System. RSNA member user name and password are required.

AAST Organ Injury Scales ($4.99)

- o This app provides comprehensive information regarding organ injury grading following trauma for nearly all organ systems based on the American Association for the Surgery of Trauma (AAST) guidelines.

Mammogram Atlas ($4.99)

- o An interactive app that presents 50 mammogram cases, which can be sorted based on pathology, appearance, or BIRADS category. Quiz mode is available.

<u>CTisus iLecture Series (Free)</u>

- o Over 125 lectures are offered through this app, which are categorized by organ system. Additional topics provided include radiation dose, 3D imaging, trauma, incidentaloma, and protocol information.

<u>Chest X-Ray Interpreter ($0.99)</u>

- o This app provides sample chest radiographs with both common and unusual findings with the purpose of teaching chest X-ray interpretation. Included is a radiology processor that produces reports,which can be saved, e-meailed, or added to the electronic medical record.

<u>Pocket Rads ($0.99)</u>

- o Classic plain radiographic, CT, and MRI findings are presented to teach basic radiology interpretation. Clear and concise descriptions with labels are provided for each case.

<u>RealWorld Radiology ($2.99)</u>

- o This app provides 30 real world chest radiographic cases for learning thoracic radiology interpretation. Each case is annotated and every month additional cases are uploaded for free.

Medical Reference

<u>Med Mnemonics Pro ($1.99)</u>
- o Over 1700 medical mnemonics are available to help learn material and study for exams. Material is updated for free and personal mnemonics may be inputted and saved.

<u>iPharmacy ($0.99)</u>
- o This app, powered by GoodRx, has features including medication price comparison, pill identifier, medication guide, drug coupons, medication scheduler, and FDA recalls/alerts. Medication price comparison is the strongest feature of this app with drug prices for every major US pharmacy chain and many local stores.

<u>Eponyms ($1.99)</u>
- o Alphabetized and searchable medical eponyms are provided in this app with detailed descriptions and facts about each. Over 1,700 common and obscure eponyms are available.

Quiz

<u>Surgical Radiology (Free)</u>

- o A game based educational app, which tests the user against a clock to identify radiologic pathology and then answer multiple-choice questions. Cases focus on surgical-radiologic correlates.

<u>CTisus iQuiz (Free)</u>

- o Radiology CT cases are presented in quiz format and are categorized by organ system. A discussion of the case follows each question.

Speed Bones Lite ($0.99)

- o A game that tests speed and accuracy for identify osseous structures of the skeleton. Points are awarded for precision, speed, and consecutive correct answers.

Rad Tap Tap-lite

- o A game based format for learning radiological anatomy on plain radiographs. Point are awarded for identifying the correct anatomic structure. This is a fast and interactive way to learn radiologic anatomy.

USMLE A Day (Free)

- o This app presents one random USMLE related question daily. New questions are continually added to the server. Answers and explanations are provided.

Presenting/Teaching

2Screens ($4.99)

- o This app allows the user to mirror presentations, PDFs or images wirelessly to a computer attached to an LCD projector. During the presentation, the images may then be interactively annotated by anyone using this app.

- Airserver ($2.99)
  - o An app that allows content from an iPhone or iPad to be synced and displayed on a Mac/PC or HDTV.

BaiBoard (Free)

- o An interactive app that allows collaboration over the Internet. Multiple interfaces are available including multi-page whiteboards, annotatable PDFs, or screen sharing options.

Keynote ($9.99)

- o Based on the Mac presentation program this mobile version is downloadable on the iPhone/iPad and allows creation of presentations just as on a desktop/laptop.

Explain Everything ($2.99)

- o This app is a fast, easy and cheap way to record and upload videos of your presentations from a PowerPoint or image set, including annotations.

ShowMe (Free)

- o Turns the iPad into a mobile whiteboard with the capability of drawing, importing pictures, voice recording, sharing via the ShowMe network, and saving work.

Blackboard (Free, $1.99, or $5.99)

- o This app keeps track of course work by allowing the user to receive information about course activity, check grades, post to discussions, attach files from Dropbox, view assignments, and much more. If licensed by a school, the app is free for the user. Otherwise it costs $1.99 per year or $5.99 for life.

Presenter Pro (Free)

- A professional presentation training app that offers presentation skills, presentation design guidelines, and hundreds of tips for presenting. Includes graphics, audio, and video files to enhance the educational experience.

Viewbox ($2.99)

- A presentation based app that allows the user to view and present medical images for teaching. Images may be accessed from the iPad Photo Library, Picasa, Dropbox, iCloud, and the RSNA MIRC library.

Comic Life ($4.99)

- An app for creating comics with many features including speech balloons, photo filters, comic lettering, templates, and various effects. Comics are created from photos either taken on the device or uploaded and may then be shared online, printed, or emailed.

Productivity

BaiBoard (Free)

- An interactive app that allows collaboration over the Internet. Multiple interfaces are available including multi-page whiteboards, annotatable PDFs, or screen sharing options.

Dropbox (Free)

- An easy to use app that allows access to downloaded documents, photos, and videos from anywhere Internet is available. Files may also be shared and are always available online even if your device is damaged.

Air Sketch (Free and $9.99 versions)

- A whiteboard app with free and full versions. The free edition supports drawing of basic diagrams while the full edition allowing the user to annotate PDFs, which may be created from PowerPoint or Keynote formats.

Scan to PDF ($4.99)

- Converts images or documents from the iPad/iPhone to PDF format. Image post processing and the ability to export PDFs transforms your mobile device into a scanner.

MindNode ($9.99)

- A mindmapping application that organizes thoughts and brainstorming sessions by developing a flowchart-like diagram of ideas and how they are connected. A limited Lite edition is also available.

iThoughts (mindmapping) ($7.99)

- A mindmapping app that organizes thoughts, notes, plans, and tasks with flowcharts and free sketching. In addition, documents may be imported to or exported from desktop applications. The iThoughtsHD version is available for $9.99.

Popplet ($4.99)

- This versatile organizational app provides the ability to record notes, brainstorm with mindmapping, create photo albums and presentations, plan projects with

diagrams and charts, and develop ideas. The Lite version is limited to only one Popplet.

Penultimate ($0.99)

- o The original handwriting app that allows the user to take notes, draw sketches, and share work online in PDF format. Simulates note taking on paper with realistic paper and ink-like graphics.

Evernote (Free)

- o An easy-to-use app that saves and organizes notes, photos, to-do-lists, and voice reminders. Saved information is searchable and most notably synched across all devices providing access no matter which device is used.

Noteability ($1.99)

- o Handwriting, PDF annotation, typing, recording, and organization are all included with this app providing flexible note taking. Advanced word processing and automatic syncing are also provided.

Numbers ($9.99)

- o An app designed for the creation spreadsheets with tables, charts, photos, and graphics enhancing design and functionality. Work may then be exported to Microsoft Excel, Numbers '09, or a PDF document.

Pages ($9.99)

- o Word processing app specifically deigned for mobile devices with many of the full features found on the desktop version. Documents may be imported as Pages '09 and Microsoft Word files as well as exported as Pages '09, Microsoft Word, or PDF formats.

SugarSync (Free)

- o Easy to use app that syncs all data including documents, photos, videos, and audio files from any device or computer to a cloud drive, which may then be accessed from anywhere e.g. access your laptop documents from your Ipad. Automatic syncing after file saving ensures constant data backup.

Organization

Toodledo ($2.99)

- o A high-powered task and note manager app for to-dos with features such as chronological tracking of tasks, reminder alarms, and syncing tasks on a map with proximity alerts.

Tripit (Free)

- o Travel organizer that keeps all travel information in one easy to access location. An automatic itinerary is generated from travel confirmation emails forwarded to plans@tripit.com. Allows sharing of trip details so family and friends know your plans. A Pro edition is available for $49/year with additional features and no advertisements.

Doodle: easy scheduling ($2.99)

- o An easy to use scheduling app, based on the web interface, for finding a mutually beneficial meeting date and time for a group of people. Poll options and comments for each meeting are offered.

<u>Next Thing ($4.99)</u>

- o A task manager with a specific aim to focus the user on the next task at hand to increase productivity. Easy to add new tasks and shuffle task order.

Other Education

<u>iBooks (Free)</u>

- o An app that provides access to the iBookstore where the latest best selling to classic books may be purchased and downloaded on a mobile device.

<u>iTunes U (Free)</u>

- o Provides access to the world's largest catalog of free educational material from leading universities and other schools. More than 500,000 free lectures, videos, books, and other resources are available through this app.

Entertainment

<u>Amazing X-Ray FX2 Lite (Free)</u>

- o Fun X-ray app that simulates radiographic exposures when holding a mobile device over different body parts.

<u>Bone Scan Bob ($0.99)</u>

- o Elementary School level anatomy game for identifying skeletal structures. Results are scored at the end of each round of play.

<u>This is my body-Anatomy for kids ($1.99)</u>

- o An education app for kids to lean basic human anatomy and physiology. Sections include information about the skin, senses, digestive system, nervous system, and much more.