

#### **KEYWORDS**

3D 3D printing 4D computed tomography (4DCT) absolute dosimetry acceptance testing accreditation body accurate self-assessment achievement activation adaptability adaptive radiotherapy adaptive samplina aliasing alpha-particles alternative payment model (APM) ambulatory payment classification (APC) ambulatory surgical center (ASC) american association of physicists in medicine (AAPM) american board of medical physics (ABMP) american board of radiology (ABR) american college of radiation oncology (ACRO) american college of radiology (ACR) american medical association (AMA) american society for radiation oncology (ASTRO)

amorphous selenium

amorphous silicon anatomical models angiography angioplasty anisotropy anthropomorphic applicator arterial input function arteriovenous malformation (AVM) artificial intelligence (AI) asymmetric fields atherosclerosis Auger electrons augmented reality autocorrelation function B-mode backprojection backscatter **Bayesian statistics** beam hardening beam shaping beta particles billing code bioeffect dose bioelectromagnetics biological dosimetry bipartition models blood flow blood vessels bolus bone dosimetry bone mineral density (BMD)

bone structure

transplantation

bone-marrow

boron neutron capture theory (BNCT) boronophenylalanine (BPA) brachytherapy brain breast calcifications calibration canadian organization of medical physicists (COMP) capture gamma rays carrier advisory committee (CAC) carrier medical director (CMD) cavity theory cell kinetics centers for medicare and medicaid services (CMS) cerebral vasculature chamfer matching change catalyst charge coding chemical dosimetry chest radiography classifier design clinical privilege clinical trials Co-60 code of ethics coherent scatter coincidence counting collapsed cone superposition collection efficiency collimation color flow imagina



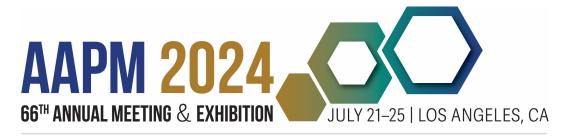
commissioning communication skills community outreach compensators competency Compton effect computed radiography computed tomography simulation computer aided diagnosis (CAD) computer animation computer software computer vision cone beam computed tomography (CBCT) cone-beam CT conference of radiation control program directors (CRCPD) conflict management conformal radiotherapy continuina medical education contour extraction contralateral subtraction contrast contrast agent conversion factor convolution convolution/superposition cost function course design COVID-19 Pandemic credentialing cross sections cross validation crosstalk Cs-137 CT

CT colonography

current procedural terminology (CPT) curricula cyclotrons data acquisition data interpolation deadtime decision theory deconvolution deep learning (DL) deformation delegation skills demonstrations densitometry density scaling dental radiography detectability index detective quantum efficiency (DQE) developing others diagnostic radiology diagnostic-related groups (DRG) dialysis DICOM DICOM-RT diffusion digital breast tomosynthesis (DBT) digital imaging digital subtraction angiography (DSA) digitially reconstructed radiograph (DRR) diodes diodes distal edge tracking distortion distributed computing Doppler ultrasound

dose

dose point kernel dose response dose uniformity dose volume histograms dose-surface histogram dosimetry dosimetry protocols dual-energy imaging dual-energy x-ray absorptiometry (DXA) dynamic multileaf collimator (DMLC) dynamic wedge echo planar imaaina edge detection edge spread function education effective dose FGS4 elastic matching electrocardioarams electron contamination electron optics electron therapy electronic disequilibrium electronic portal imaging EM reconstruction emotional self-awareness emotional self-control empathy energy dependence energy fluence energy imparted energy spectrum enhanced dynamic wedge epithermal neutrons equivalent fields estimation theory ethical behavior evaluation and management (E/M)



expectation maximization (EM) exposure optimization exposure reduction external affairs extra-focal radiation extracellular contrast agents extrapolation chamber eye plaques failure modes and effects analysis fast Fourier transformation fast neutrons fat suppression fault tree feature extraction feature selection fee for service (FFS) Fermi-Eyges theory fetal dose field shaping film filtration finance finite element analysis **FLASH** flat-panel imagers flattening filters flood-field uniformity flow imaging flow velocity fluorescence fluorodeoxyglucose (FDG) fluoroscopy food and drug administration (FDA) fractal analysis freestanding cancer center

functional imaging

fuzzy logic

gamma cameras Gamma Knife aatina Gd-DTPA Geant4 ael dosimeter generalized cross-validation generators genetic algorithm geometric distortion geometric transformation geometry factor global component glomerular filtration rate glomerular filtration rate (GFR) grids group theory hand radiography harmonic imaging head and neck head scatter health insurance portability and accountability act (HIPPA) health physics healthcare common procedural coding system (HCPCS) heart heat transfer heavy ions helical CT high dose rate (HDR) high-field NMR high-resolution imaging hospital outpatient

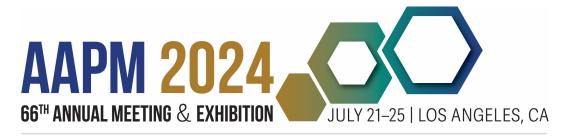
prospective payment

system (HOPPS)

Hough spectrum

hot atoms

human resources hyperthermia hypoxia I-125 image analysis image artifacts image compression image correlation image fusion image guidance image intensifier image processing image reconstruction image storage image visualization image-guided surgery image-guided therapy imaging theory immobilization in vivo dosimetry incident learning influence information resources inhomogeneity corrections initiative inspirational leadership intensifying screens intensity modulation interface dosimetry internal conversion electrons internal dosimetry internal radionuclide therapy internal wedge international classification of disease (ICD) interstitial brachytherapy interstitial hyperthermia interventional MRI intracavitary brachytherapy



intracavitary hyperthermia intraoperative radiation therapy (IORT) intravascular brachytherapy (LSO) inverse planning ion recombination ionization chamber ionizing radiation Ir-192 irregular fields joint space width K x-ray fluorescence (KXRF) k-space kev performance indicator lacunarity lasers lesion detectability liability insurance licensed medical physicist LiF light propagation light scattering line spread function linear accelerator linear attenuation coefficients linear classifier linear discriminant analysis linear energy transfer (LET) linear quadratic model linear regression analysis liquid ionization chamber local coverage determinations (LCD) localization lossy compression low contrast detectability low dose rate (LDR) low energy X-rays low-dose CT low-field MRI

lung lung perfusion lutetium oxyorthosilicate machine learnina (ML) macular degeneration magnetic fields mammographic screening mammography Markov random fields maximum likelihood estimation (MLE) **MCNP** mechanical properties medical internal radiation dose (MIRD) Medical Physicists medical physics assistant (MPA) medical physics extender medical physics licensure medical physics practice quidelines (MPPG) medically necessary medically unlikely edits (MUE) medicare medicare access and CHIP authorization act (MACRA) medicare administrative contractor (MAC) medicare physician fee schedule (MPFS) megavoltage imagina membrane permeability merit-based incentive payment system (MIPS) metal/a-Se detector microcalcifications microdosimetry microfocus x-ray

microlens arrays microprocessors microtrons microwaves mini MLC minimum perceptible contrast minimum practice standard minimum staffing level mixed integer programming modeling modifier modulation transfer function (MTF) monitor chambers monitor unit calculations monoclonal antibody therapy Monte Carlo morphology MOSFET detector motion artifacts MR MR elastography MR linac MR microscopy MR spectroscopy MRI multileaf collimator (MLC) multiple scattering multiple-echo sequence mutual information myocardial perfusion nanoparticles national correct coding initiative (NCCI) national council on radiation protection (NCRP) national coverage determination (NCD)

near infrared



neutron capture therapy new ventures leadership noise noise power spectrum noise reduction nonionizing radiation nonlinear dynamics nonlinear image warping normal tissue complication probability (NTCP) nuclear data nuclear interactions nuclear medicine nuclear regulatory commission (NRC) numerical analysis obliquity effect observer performance operations operations research ophthalmic applicators optical diffusion theory optical dosimetry optical imaging optical modelina optical tomography optical transillumination optically stimulated luminescence dosimetry (OSLD) optimism optimization organ dose organ motion organizational awareness osteoarthritis osteoporosis other outreach **PACS** 

pair production

panoramic radiography parallel computing parametric imaging patient movement patient positioning patient safety pattern recognition Pd-103 pencil beam algorithms Penelope penumbra performance tests perfusion imaging permanent implants personnel monitoring perturbation factor PET phantoms pharmacokinetic modeling Phase contrast phase space phased arrays photoacoustics photoactivation photodynamic therapy (PDT) photogrammetry photon counting photon counting detector photon detectors photoneutrons photostimulable phosphor PIN photodiodes place of service (POS) planar imaging point extraction point-based registration point-spread kernels polarity effects polarized light

polymer gels

portal imaging positron emission mammography practice accreditation practice expense practice parameter practice peer review practice standards preventative maintenance problem-solving skills process map process of care professional component professional episode professional ethics professional liability professional practice evaluation professional vitality prostate prostate therapy prosthetics proton NMR protons proximity function psychophysical analysis pterygium public education public health emergency (PHE) public information pulmonary embolism pulmonary nodules pulse sequences pulsed brachytherapy aualified medical physicist (QMP) quality assurance quality control quality management



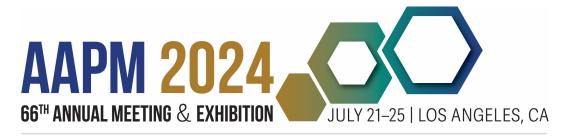
quality management program quality payment program (QPP) auantitative imaaina radial dose function radiation detectors radiation dosimetry radiation effects radiation oncology incident learning system radiation oncology practice risk priority number accreditation (ROPA) radiation protection radiation risk radiation safety radiation therapy radiation transport radiobiology radiochromic film radioembolization radioepidemiology radiography radioimmunotherapy radiolabeled microspheres radiolabeled nanoparticles radiomics radionuclide production radiosensitivity radiosurgery reciprocity failure record and verify recovery audit (RA) registration regulatory reimbursement relative biological effectiveness (RBE) relative value scale (RVS) relative value scale update

committee (RUC)

relative value unit (RVU) relaxation times resolution respect for diversity, inclusion, and equity respiration responsible behavior restenosis rheumatoid arthritis risk risk management **ROC** analysis ROI fluoroscopy rotational therapy rotational tomography scatter scattering theory scintillation cameras scintillators scintimammography scope of practice screen unsharpness sectoring seed localization seamentation self-confidence semiconductor detectors sensitometry service orientation setup errors setup verification shape analysis shape deformation shieldina signal processing silicon photomultipliers simulation skeletal radiography small fields

SNR

**SNVM** software source strength spatial filtering spatial resolution **SPECT** spectrometry spectroscopic imaging specular microscopy spiral CT splines standard operating procedures statistical analysis STEM education stents stereolithography stereology stereomammography stereotactic body radiation therapy (SBRT) stereotactic breast biopsy (SBB) stereotactic radiosurgery stochastic processes Stopping power storage phosphors strategic planning stroke structure analysis supervision surface dose surface matching Swank factor synchrotron radiation systematic errors target localization targeted radiotherapy Tc-99m teaching



teamwork and collaboration

technical component

technical episode

technical reimbursement

technical standard

telehealth teleradiology templates

temporal resolution temporal subtraction

test objects texture analysis

the joint commission (TJC)

thermal ablation thermal dosimetry thermal neutrons thermoacoustics thermoluminescent dosimeter (TLD) thermometry thin film transistors

third party payers thresholding

TIFF

tissue characterization

tissue composition

tissue density

tissue equivalency tolerance doses

tomography tomosynthesis

tomotherapy

total body irradiation (TBI)

total effective dose equivalent (TEDE)

total skin electron therapy

(TSET)

total skin irradiation trabecular bone transducers transfer function

transformation

transit dosimetry

transmission measurements

transparency

transport equation

treatment planning

treatment techniques

treatment verification

tube loading

tumor control

tumor vasculature

turbid media

turbulence

ultrasonics

unsealed radionuclide

validation

value and advocacy

vascular brachytherapy

vascular imaging

veiling glare

ventilation/perfusion

vessel tracking

videodensitometry

virtual wedge

visual perception

volume effects

voxel dose calculation

warping

wavelets

wedges

Wiener spectrum

Work from Home

workforce assessment

x-ray production

x-rays