



Genève, le 11 décembre 2023

RAPPORT D'ACTIVITES DANS LE CADRE DU RENOUVELLEMENT DU MANDAT DE *Professeur ordinaire* DE M. [HABIB ZAIDI]

- **Période du mandat:** du 01/02/2022 au 30/09/2025
- **Activités d'enseignement:** (résumé des différents types d'enseignements donnés - niveau bachelor, master, école doctorale - pendant la période, nombre de doctorants suivis. Deux rapports d'évaluation des enseignements effectués pendant la même période sont à joindre au dossier de renouvellement : voir courrier d'information sur le site de la commission de renouvellement)
- **Formation prégraduée**
 - Dès 2002 Responsable Compétence Cliniques - Séminaire interactif CC Radiologie 3: Médecine nucléaire : Scintigraphies, PET-CT, Unité Respiration, Bachelor (2^{ème} année), (28h/an)
 - 2018 Cours de Physique Générale A, Bachelor (1^{ère} année), (Intervention – cours donné par le Pr. J-P Wolf)
- **Formation postgraduée**
 - 2022-2023 Conférences invitées, séminaires, workshops, tutoriaux (~ 30h/an)
 - 2021-2023 Supervision d'un mémoire de Master, Programme Neurosciences UniGe (15h/an)
 - 2021-2022 Supervision d'un mémoire de Master, Programme Neurosciences UniGe (15h/an)
 - 2019-2023 Supervision de 16 thèses de doctorat es sciences (dont 6 déjà soutenues) et une thèse en médecine

Supervision de thèses de doctorat (2022-2023)

- Azadeh Akhavanallaf, PhD student, Université de Genève, "*Development of advanced computational anatomical models: Applications to dose assessment in PET/CT imaging*" (soutenu en 2023).
- Isaac Shiri Lord, PhD student, University of Geneva (Switzerland), "*Molecular imaging-guided predictive and prognostic modelling using radiomics and deep learning*" (soutenu en 2023).
- Amirhossein Sanaat, PhD student, University of Geneva (Switzerland), "*Deep learning-based enhancement of image quality in low dose PET scanning*" (soutenu en 2023).
- Neda Zaker, PhD student, Shiraz University (Iran), "*Advances in whole-body PET parametric imaging*" University of Shiraz, Iran (soutenu en 2022).
- Nasreddine Boutaghane, PhD student, University of Sciences & Technologies (Algeria) "*Conceptual design of a large pixelated CZT detector with four-hole collimator matched pixel detector for SPECT imaging*", Université des Sciences et Technologie Houari Boumediene, Algerie (soutenu en 2022).
- Imene Mecheter, "*Deep learning-assisted MRI-guided attenuation correction in PET*", Brunel University, UK, (soutenu en 2021).
- Amir Ghabrial, PhD student, Université de Genève & University of Technology Sydney (Australie), "*Simulation-based design of cost-effective whole-body PET scanners*", (soutenance prévue en 2024).
- Ghasem Hajianfar, PhD student, Université de Genève "*Combined deep learning and radiomics analysis*

in multimodality medical imaging" (expected 2027).

- Yiyi Hu, PhD student, Université de Genève "*Strategies for deep learning-assisted signal separation in multi-tracer PET imaging*" (expected 2027).
- Xiaotong Hong, PhD student, Southern Medical University Guangzhou (China) "*Deep learning-guided quantitative analysis in PET imaging*" (expected 2025).
- Zahra Mansouri, PhD student, Université de Genève "*Personalized dosimetry in theranostics using deep learning*" (expected 2025).
- Mehdi Amini, PhD student, Université de Genève "*Design considerations of a PET scanner dedicated for prostate cancer imaging and prognostic modelling in clinical oncology*" (expected 2025).
- Abdollah Saberi Manesh, PhD student, Université de Genève, "*Deep learning-assisted PET image reconstruction for a PET scanner dedicated for prostate cancer imaging*" (expected 2025).
- Chang Sun, PhD student, Beijing University of Posts and Telecommunications (China) "*Deep learning-assisted quantitative analysis in CT imaging*" (expected 2024).
- Yazdan Salimi, PhD student, Université de Genève, "*Deep learning-guided dosimetry calculations in hybrid imaging*" (expected 2024).
- Mustafa Arslan, PhD student, Université de Genève, "*Advanced molecular neuroimaging using deep learning*" (expected 2024).

Supervision de thèses de Master (2021-2023)

2020-2022 Supervision d'un étudiant Master, Université de Genève (15h/an)

- Andrew Boehringer (Mémoire de Master), Programme Neurosciences, Université de Genève, "*Deep learning-guided quantitative multimodality neuroimaging*" (soutenu en 2022).

2021-2023 Supervision d'une étudiante Master, Université de Genève (15h/an)

- Agathe Pezonni (Mémoire de Master), Programme Neurosciences, Université de Genève, "*Characterization of artifacts in hybrid PET/CT and PET/MR imaging*" (soutenu en 2023).

- **Activités de recherche :** (présentation des activités de recherche menées pendant le mandat en cours, nombre et montants des fonds obtenus)
[Facultatif pour les chargés de cours et chargés d'enseignement]

Plusieurs projets sont en cours au laboratoire d'instrumentation PET et Neuroimagerie. Les thèmes principaux sont :

- ✓ Instrumentation PET pour l'imagerie de la prostate haute résolution temporelle et spatiale.
- ✓ Amélioration de la qualité et précision de la quantification des images multimodales cliniques.

- ✓ Optimisation des protocoles d'imagerie et quantification en PET-CT et PET-IRM.
- ✓ Simulation des systèmes d'imagerie PET et CT par la méthode de Monte Carlo.
- ✓ Reconstruction, analyse et traitement des images médicales multimodales.
- ✓ Instrumentation en imagerie moléculaire multimodale clinique.
- ✓ Utilisation du PET-CT pour le planning de traitement en radio-oncologie.
- ✓ Utilisation des techniques d'intelligence artificielle (Deep learning) dans l'analyse d'images.

Liste des subsides obtenus (2021-2023):

2024-2030	EEC Horizon PREMIO COLLAB 101136812, subside de recherche " <i>Personalised response monitoring in oncology: Co-creating clinical trials in advanced breast cancer</i> ", 7'999'921 €, 419'875 € perçu.
2024	Swiss National Science Foundation, FNRS 316030_221476, " <i>Preclinical PET/CT imaging in multidisciplinary research to assess mechanistic, diagnosis and treatment of diseases</i> ", 420'000 CHF.
2022-2024	EEC ATTRACT Phase 2, POSICS-2, Grant 777222, subside de recherche " <i>Position-sensitive SiPMs compact and scalable Beta-camera</i> ", 500'000 €, 150'000 € perçu
2021-2024	Fondation Privée des HUG, subside de recherche « <i>A high spatial and temporal resolution PET scanner dedicated for prostate cancer imaging</i> » CONFIRM RC05-09 (total 610'000 CHF), requérant principal, 100% perçu
2020-2024	EEC Horizon 2020 NFRP-2019-2020, subside de recherche « <i>Radiation risk appraisal for detrimental effects from medical exposure during management of patients with lymphoma or brain tumours</i> » SINFONIA NFRP-945196 (total 5'999'998€), co-requérant, 603'988 CHF (9.2%) perçu
2020-2024	CEE Eurostars/Eureka Horizon 2020, subside de recherche « <i>Organ-specific PET scanner for early diagnosis of prostate cancer</i> » E! 114021 ProVision (total 2'357'172 €), co-requérant, 273'776 CHF 21.1% perçu
2018-2022	FNRS, subside de recherche « <i>Towards patient-specific hybrid whole-body PET parametric imaging</i> » FNRS 320030_176052, 429'000 CHF, requérant principal, 100% perçu.

- [si Faculté de médecine] **Activités cliniques:**
- Physicien expert en radioprotection des services de Médecine Nucléaire et imagerie moléculaire et radiologie (HUG).
- Responsable technique du parc technique CT (radiologie) et imagerie hybride SPECT/CT, PET/CT et PET/IRM (médecine nucléaire) en application de l'art. 74 de l'ordonnance sur la radioprotection (OFSP).
- Membre du COPIL DACS (Dosimetry Archiving and Communication System), Service de radiologie (HUG)

- **Publications pendant la période du mandat:** (liste des publications pendant la période considérée, avec mention du h-factor, si pertinent dans la discipline)
[Facultatif pour les chargés de cours et chargés d'enseignement]

ISI-h index = 76 (Google scholar), 20'500 citations

a. ARTICLES ORIGINAUX PUBLIES OU ACCEPTES DANS DES JOURNAUX A POLITIQUE EDITORIALE (5 ANS)

2023

1. Jahangir R, Kamali-Asl A, Arabi H, and **Zaidi H** "Strategies for deep learning-based attenuation and scatter correction of brain ^{18}F -FDG PET images in the image domain" Med Phys (2023) *in press*
2. Asadi A, Akhavanallaf A, Hossein SA, Vosoughi N and **Zaidi H** "Development and validation of an optimal GATE model for proton pencil-beam scanning delivery" Z Med Phys (2023) *in press*
3. Hajianfar G, Sabouri M, Salimi Y, Amini M, Bagheri S, Jenabi E, Hekmat S, Maghsudi M, Mansouri Z, Khateri M, Jamshidi MH, Jafari E, Rajabi AB, Asadi M, Oveisi M, Shiri I and **Zaidi H** "Artificial intelligence-based analysis of whole-body bone scintigraphy: The quest for the optimal deep learning algorithm and comparison with human observer performance" Z Med Phys (2023) *in press*
4. Shiri I, Amini M, Yousefirizi F, Vafaei Sadr A, Hajianfar G, Salimi Y, Mansouri Z, Jenabi E, Maghsoudi M, Mainta I, Becker M, Rahmim A and **Zaidi H** "Information fusion for fully automated segmentation of head & neck tumors from PET and CT images" Med Phys (2023) *in press*
5. Mecheter I, Abbod M, **Zaidi H** and Amira A "Transfer learning from T1-weighted to T2-weighted MR sequences for brain image segmentation" CAAI Trans Intell Technol (2023) *in press*
6. Whybra P, Zwanenburg A, Andrearczyk V, Schaer R, Apte A, Ayotte A, Baheti B, Bakas S, Bettinelli A, Boellaard R, Boldrini L, Buvat I, Cook GJR, Dietsche F, Dinapoli N, Goh V, Guckenberger M, Hatt M, Hosseinzadeh M, Iyer A, Jaouen V, Lenkowicz J, Loutfi MAL, Löck S, Marturano F, Morin O, Nioche C, Orlhac F, Pati S, Rahmim A, Rezaei SM, Rookyard C, Salmanpour MR, Schindele A, Shiri I, Spezi E, Tanadini-Lang S, Tixier F, Upadhaya T, Valentini V, van Griethuysen J, Yousefirizi F, **Zaidi H**, Muller H, Vallières M, and Depeursinge A, "The Image Biomarker Standardization Initiative: Standardized convolutional filters for quantitative radiomics" Radiology (2023) *in press*
7. Xin L, Zhuo W, Liu Q, Xie T and **Zaidi H** "Triple-source saddle-curve cone-beam photon counting CT image reconstruction: A simulation study" Z Med Phys (2023) *in press*
8. Ahmadyar Y, Kamali-Asl A, Arabi H, Samimi R and **Zaidi H** "Hierarchical approach for pulmonary-nodule identification from CT images using YOLO model and a 3D neural network classifier" Radiol Phys Technol (2023) *in press*

9. Young P, Heeman F, Axelsson J, Collij LE, Saint-Aubert L, Sanaat A, Lubberink M, Frisoni G, **Zaidi H**, Barkhof F, Farrar G, Baker S, Gispert JD, Garibotto V, Rieckmann A and Schöll M "Impact of reduced injected dose on the assessment of amyloid PET scans" Eur J Nucl Med Mol Imaging (2023) *in press*
10. Hajianfar G, Haddadi Avval A, Hosseini SA, Nazari M, Oveissi M, Shiri I and **Zaidi H** "Time-to-event overall survival prediction in glioblastoma multiforme patients using magnetic resonance imaging radiomics" Radiol Med Vol. 128, No. 12, pp 1521-1534 (2023).
11. Shiri I, Salimi Y, Maghsudi M, Jenabi E, Harsini S, Razeghi B, Mostafaei S, Hajianfar G, Sanaat A, Jafari E, Samimi R, Khateri M, Sheikhzadeh P, Geramifar P, Dadgar H, Bitrafan Rajabi A, Assadi M, Benard F, Vafaei Sadr A, Voloshynovskiy S, Mainta I, Uribe C, Rahmim A and **Zaidi H** "Differential privacy preserved federated transfer learning for multi-institutional ⁶⁸Ga-PET image artifacts detection and disentanglement" Eur J Nucl Med Mol Imaging Vol. 51, No. 1, pp 40-53 (2023).
12. Salimi Y, Akhavanallaf A, Mansouri Z, Shiri I and **Zaidi H** "Real-time, acquisition parameter-free, voxelwise patient-specific Monte Carlo dose reconstruction in total-body CT scanning using deep neural networks" Eur Radiol Vol. 33, No. 12, pp 9411-9424 (2023).
13. Rahmim A, Toosi A, Salmanpour MR, Dubljevic N, Janzen I, Shiri I, Yuan R, Ho C, **Zaidi H**, MacAulay C, Uribe C, Yousefirizi F "Tensor radiomics: Paradigm for systematic incorporation of multi-flavoured radiomics features" Quant Imaging Med Surg Vol. 13, No. 12, pp 7680-7694 (2023).
14. Shiri I, Salimi Y, Hervier E, Pezzoni A, Sanaat A, Mostafaei S, Rahmim A, Mainta I and **Zaidi H** "Artificial intelligence-driven single-shot PET image artifact detection and disentanglement: Towards routine clinical image quality assurance" Clin Nucl Med Vol. 48, No. 12, pp 1035-1046 (2023).
15. Rezaei H, Sheikhzadeh P, Ghafarian P, **Zaidi H** and Ay MR "Accurate modeling and performance evaluation of a total-body PET scanner using Monte Carlo simulations" Med Phys Vol. 50, No. 11, pp 6815-6827 (2023).
16. Taleie H, Hajianfar G, Sabouri M, Parsaee M, Houshmand G, Bitarafan Rajabi A, **Zaidi H** and Shiri I "Left ventricular myocardial dysfunction evaluation in thalassemia patients using echocardiographic radiomic features and machine learning algorithms" J Dig Imaging Vol. 36, No. 6, pp 2494-2506 (2023).
17. Hashemi S, Aghamiri SM-R, Siavashpour Z, Kahani M, **Zaidi H** and Jaber R "Hydrogen nanobubbles: A novel approach toward radio-sensitization agents" Med Phys Vol. 50, No. 10, pp 6589-6599 (2023).
18. Khodabakhshi Z, Amini M, Hajianfar J, Oveisi M, Shiri I and **Zaidi H** "Dual-centre harmonised multimodal PET/CT image radiomic features and machine learning algorithms for Non-Small Cell Lung Cancer histopathological subtype phenotype decoding" Clin Oncol Vol. 35, No. 11, pp 713-725 (2023).
19. Hemmati H, Kamali-Asl A, Ghafarian P, Rahmim A, **Zaidi H** and Ay MR "List-mode quantitative joint reconstruction of activity and attenuation maps in time-of-flight PET" J Instrum Vol. 18, No. 9, pp P09041 (2023).
20. Böhringer AS, Sanaat A, Arabi H and **Zaidi H** "An active learning approach to train a deep learning algorithm for tumor segmentation from brain MR images" Insights Imaging Vol. 14, No. 1, pp 141 (2023).

21. Amini M, Pursamimi M, Hajianfar G, Salimi Y, Saberi A, Mehri-Kakavand G, Nazari M, Ghorbani M, Shalbaf A, Shiri I and **Zaidi H** "Machine learning-based diagnosis and risk stratification of coronary artery disease using myocardial perfusion imaging SPECT: A radiomics study" Sci Rep Vol. 13, pp 14920 (2023).
22. Mohebi M, Amini M, Alemzadeh-Ansari MJ, Alizadeh Asl A, Bitarafan Rajabi A, Shiri I, **Zaidi H** and Orooji M "Post-revascularization ejection fraction prediction for patients undergoing percutaneous coronary intervention based on myocardial perfusion SPECT imaging radiomics: A machine learning study" J Dig Imaging Vol. 36, No. 4, pp 1348-1363 (2023).
23. Dashtbani Moghari M, Sanaat A, Young N, Moore K, **Zaidi H**, Evans A, Fulton R, and Kyme A "Reducing scan duration and radiation dose in cerebral CT perfusion imaging using a recurrent neural network" Phys Med Biol Vol. 68, No. 16, pp 165005 (2023).
24. Akhavanallaf A, Peterson AB, Fitzpatrick K, Roseland M, Wong KK, El Naqa I, **Zaidi H** and Dewaraja Y "The predictive value of ^{68}Ga -DOATATE PET and biomarkers in ^{177}Lu -PRRT tumor dosimetry" Eur J Nucl Med Mol Imaging Vol. 50, No. 10, pp 2984-2996 (2023).
25. Shiri I, Razeghi B, Sadr AV, Amini M, Salimi Y, Ferdowsi S, Boor P, Gündüz D, Voloshynovskiy and **Zaidi H** "Multi-institutional PET/CT image segmentation using federated deep transformer learning" Comput Meth Prog Biomed Vol. 240, pp 107706 (2023).
26. Riveira-Martin M, Akhavanallaf A, Mansouri Z, Bianchetto Wolf N, Salimi Y, Ricoeur A, Mainta I, Garibotto V, Lopez Medina A and **Zaidi H** "Predictive value of $^{99\text{m}}\text{Tc}$ -MAA-based theragnostic dosimetry in personalized ^{90}Y -SIRT planning of liver malignancies" EJNMMI Res Vol. 13, No. 1, pp 63 (2023).
27. Sanaat A, Shooli H, Böhringer AS, Sadeghi M, Shiri I, Salimi Y, Ginovart N, Garibotto V, Arabi H and **Zaidi H** "A cycle-consistent adversarial network for brain PET partial volume correction without prior anatomical information" Eur J Nucl Med Mol Imaging Vol. 50, No. 7, pp 1881-1896 (2023).
28. Qu S, Liu H, Xie T, Liu H, Giger ME, Quan G and **Zaidi H** "Patient-specific fetal radiation dosimetry for pregnant patients undergoing abdominal and pelvic CT imaging" Med Phys Vol. 50, No. 6, pp 3801-3815 (2023).
29. Salimi Y, Shiri I, Akhavanallaf A, Mansouri Z, Arabi H and **Zaidi H** "Fully automated accurate patient positioning in computed tomography using anterior-posterior localizer images and a deep neural network: A dual-center study" Eur Radiol Vol. 33, No. 5, pp 3243-3252 (2023).
30. Qu S, Xie T, Giger ME and **Zaidi H** "Construction of a digital fetus library for radiation dosimetry" Med Phys Vol. 50, No. 4, pp 2577-2589 (2023).
31. Sabouri M, Hajianfar G, Hosseini Z, Amini M, Mohebi M, Ghaedian T, Madadi S, Rastgou F, Oveisi M, Bitarafan Rajabi A, Shiri I and **Zaidi H** "Myocardial perfusion SPECT imaging radiomic features and machine learning algorithms for cardiac contractile pattern recognition" J Dig Imaging Vol. 36, No. 2, pp 497-509 (2023).
32. Shiri I, Sadr AV, Akhavan A, Salimi Y, Sanaat A, Amini M, Razeghi B, Saberi A, Arabi H, Ferdowsi S, Voloshynovskiy S, Gündüz D, Rahmim A and **Zaidi H** "Decentralized collaborative multi-institutional PET

attenuation and scatter correction using federated deep learning" Eur J Nucl Med Mol Imaging Vol. 50, No. 4, pp 1034-1050 (2023).

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33. Arian F, Amini M, Mostafaei S, Rezaei Kalantari K, Hadadi Aval A, Shahbazi Z, Kasani K, Bitarafan Rajabi A, Chatterjee S, Oveisi M, Shiri I and **Zaidi H** "Myocardial function prediction after coronary artery bypass grafting using MRI radiomics features and machine learning algorithms" J Dig Imaging Vol. 35, No. 6, pp 1708-1718 (2022).
34. Salimi Y, *Shiri I*, Akhavanallaf A, Mansouri Z, Sanaat A, Pakbin M, Hossein MG, Arabi H, and **Zaidi H** "Deep learning-based calculation of patient size and attenuation surrogates from localizer image: Toward personalized CT protocol optimization for thorax imaging" Eur J Radiol Vol. 157, pp 110602 (2022).
35. Sanaat A, Akhavanallaf A, *Shiri I*, Salimi Y, Arabi H and **Zaidi H** "Deep-TOF-PET: Deep learning-guided generation of time-of-flight (TOF) PET from non-TOF brain PET images in the image and projection domains" Hum Brain Mapp Vol. 43, No. 16, pp 5032-5043 (2022).
36. Moradi Khaniabadi P, Bouchareb Y, Al Dhuhli H, Shinri I, Al Kindi F, Moradi Khaniabadi B, **Zaidi H**, Rahmim A "Two-step machine learning to diagnose and predict involvement of lungs in COVID-19 and pneumonia using CT radiomics" Comput Biol Med Vol. 150, pp 106165 (2022).
37. Zaker N, Haddad K, Faghihi R, Arabi H and **Zaidi H** "Direct inference of Patlak parametric images in whole-body PET/CT imaging using convolutional neural networks" Eur J Nucl Med Mol Imaging Vol. 49, No. 12, pp 4048-4063 (2022).
38. Makkia R, Nelson K, **Zaidi H** and Dingfelder M "Hybrid computational pregnant female phantom construction for radiation dosimetry applications" Biomed Phys Eng Exp Vol. 8, No. 6, pp 065015 (2022).
39. Asadi A, Akhavanallaf A, Hossein SA, Vosoughi N and **Zaidi H** "Comparative study of passive scattering and active scanning proton therapy techniques using Monte Carlo simulations" J Instrum Vol. 17, No. 9, pp P09008 (2022).
40. Shiri I, Mostafaei S, Avval AH, Salimi Y, Sanaat Y, Akhavanallaf A, Arabi H, Rahmim A and **Zaidi H** "High-dimensional multinomial multiclass severity scoring of COVID-19 pneumonia using CT radiomics features and machine learning algorithms" Sci Rep Vol. 12, No. 1, pp 14817 (2022).
41. Sanaat A, Jamalizadeh M, Khanmohammadi H, Arabi H and **Zaidi H** "Active-PET: A multifunctional PET scanner with dynamic gantry size featuring high-resolution and high-sensitivity imaging: A Monte Carlo simulation study" Phys Med Biol Vol. 67, No. 15, pp 155021 (2022).
42. Katirtsidou E, Rager O, Varoquaux A, Poncet A, Lenoir V, Monnier Y, Dulguerov N, Platon A, Garibotto V, **Zaidi H** and Becker M "Detection of distant metastases and distant second primary cancers in head and neck squamous cell carcinoma: Comparison of ¹⁸F-FDG PET/MRI and ¹⁸F-FDG PET/CT" Insights Imaging Vol. 13, No. 1, pp 121 (2022).
43. Mecheter I, Abbod M, Amira A and **Zaidi H** "Deep learning with multiresolution handcrafted features for brain MRI segmentation" Art Intell Med Vol. 131, pp 102365 (2022).

44. Hosseini SA, Shiri I, Hajianfar G, Bahadorzade B, Ghafarian P, **Zaidi H** and Ay MR "Synergistic impact of motion and acquisition/reconstruction parameters on ¹⁸F-FDG PET radiomics features in non-small cell lung cancer: Phantom and clinical studies" Med Phys Vol. 49, No. 6, pp 3783-3796 (2022).
45. Shiri I, Sadr AV, Amini M, Salimi Y, Sanaat A, Akhavan A, Razeghi B, Ferdowsi S, Saberi A, Arabi H, Becker M, Voloshynovskiy S, Gündüz D, Rahmim A and **Zaidi H**, "Decentralized distributed multi-institutional PET image segmentation using a federated deep learning framework" Clin Nucl Med Vol. 47, No 7, pp 606-617 (2022).
46. Sanaat A, Shiri I, Ferdowsi S, Arabi H and **Zaidi H** "Robust-Deep: A method for increasing brain imaging datasets to improve deeplearning models' performance and robustness" J Dig Imaging Vol. 35, No. 3, pp 469-481 (2022).
47. Shiri I, Salimi Y, Pakbin M, Hajianfar G, Avval AH, Sanaat A, Mostafaei S, Akhavanallaf A, Saberi A, Mansouri Z, Askari D, Ghasemian M, Sharifipour E, Sandoughdaran S, Sohrabi A, Sadati E, Livani S, Iranpour P, Kolahi S, Khateri M, Bijari S, Atashzar MR, Shayesteh SP, Babaei MR, Jenabi E, Hasanian M, Shahhamzeh A, Foroghi Ghomi SY, Mozafari A, Teimouri A, Movaseghi F, Ahmari A, Goharpey N, Bozorgmehr R, Shirzad-Aski H, Mortazavi R, Karimi J, Mortazavi N, Besharat S, Afsharpad M, Abdollahi H, Geramifar P, Radmard AR, Arabi H, Rezaei-Kalantari K, Oveisi M, Rahmim A and **Zaidi H** "COVID-19 prognostic modeling using CT radiomic features and machine learning algorithms: Analysis of a multi-institutional dataset of 14,339 patients" Comput Biol Med Vol. 145, pp 105467 (2022).
48. Mecheter I, Abbod M, **Zaidi H** and Amira A "Brain MR images segmentation using 3D CNN with features recalibration mechanism for pseudo-CT synthesis" Neurocomputing Vol. 491, pp 232-243 (2022).
49. Olia NA, Kamali-Asl A, Tabrizi SH, Geramifar P, Sheikhzadeh P, Farzanefar S, Arabi H and **Zaidi H** "Deep learning-based denoising of low-dose SPECT myocardial perfusion images: Quantitative assessment and clinical performance" Eur J Nucl Med Mol Imaging Vol. 49, No 5, pp 1508-1522 (2022).
50. Mostafapour S, Gholamiankhah F, Maroofpour S, Momennezhad M, Asadinezhad M, Zakavi SR, Arabi H and **Zaidi H** "Deep learning-guided attenuation correction in the image domain for myocardial perfusion SPECT imaging" J Comput Des Eng Vol. 9, No 2, pp 434-447 (2022).
51. Boutaghane N, Hesse M, Bouzid B, **Zaidi H**, Jamar F, and Walrand S "Dual-layer collimator for improved spatial resolution in SPECT with CZT cameras: An analytical and Monte Carlo study" Phys Med Biol Vol. 67, No. 6, pp 065006 (2022).
52. Jabbarpour A, Mahdavi SR, Sadr AV, Esmaili G, Shiri I, and **Zaidi H** "Unsupervised pseudo CT generation using heterogenous multicentric CT/MR images and CycleGAN: Dosimetric assessment for 3D conformal radiotherapy" Comput Biol Med Vol. 143, pp 105277 (2022).
53. Amini M, Hajianfar G, Avval AH, Nazari M, Deevband MR, Pveisi M, *Shiri I*, and **Zaidi H** "Overall survival prognostic modeling of non-small cell lung cancer patients using PET/CT harmonized radiomics features: The quest for the optimal machine learning algorithm" Clin Oncol Vol. 34, No. 2, pp 114-127 (2022).

54. Shiri I, Amini M, Nazari M, Hajianfar G, Awal AH, Abdollahi H, Oveisi M, Arabi H, Rahmim A and **Zaidi H** "Impact of feature harmonization on radiogenomics analysis: Prediction of EGFR and KRAS mutations from non-small cell lung cancer PET/CT images" Comput Biol Med Vol. 142, pp 105230 (2022).
55. *Shiri I, Arabi H*, Salimi Y, Sanaat A, Akhavanallaf A, Hajianfar G, Askari D, Moradi S, Mansouri Z, Pakbin M, Sandoughdaran S, Abdollahi H, Radmard AR, Rezaei-Kalantari K, Oghli MG, and **Zaidi H** "COLI-NET: Fully automated COVID-19 lung and infection pneumonia lesion detection and segmentation from chest CT images" Int J Imaging Syst Technol Vol. 32, No. 1, pp 12-25 (2022).
56. Avar E, **Shiri I**, Hajianfar G, Abdollahi H, Kalantari KR, Kasani K, Houshmand G, Bitarafan-Rajabi A, Deevband MR, Oveisi M and **Zaidi H** "Non-contrast cine cardiac magnetic resonance image radiomics features and machine learning algorithms for myocardial infarction detection" Comput Biol Med Vol. 141, pp 105145 (2022).
57. *Arabi H* and **Zaidi H** "MRI-guided attenuation correction in torso PET/MRI: Assessment of segmentation-, atlas-, and deep learning-based approaches in the presence of outliers" Magn Res Med Vol. 87, No. 2, pp 686-701 (2022).

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58. Edalat-Javid M, **Shiri I**, Hajianfar G, Abdollahi H, Arabi H, Oveisi N, Javadian M, Zafarghandi MS, Malek H, Bitarafan-Rajabi A, Oveisi M and **Zaidi H** "Cardiac SPECT radiomic features repeatability and reproducibility: A multi-scanner phantom study" J Nucl Cardiol Vol. 28, No. 6, pp 2730-2744 (2021).
 59. **Shiri I**, Sabet KA, Arabi H, Pourkeshavarz M, Teimourian B, Ay MR and **Zaidi H** "Standard SPECT myocardial perfusion estimation from half-time acquisitions using deep convolutional residual neural networks" J Nucl Cardiol Vol. 28, No. 6, pp 2761-2779 (2021).
 60. Amirrashedi M, Sarkar S, Mamizadeh H, Ghadiri H, Ghafarian P, **Zaidi H** and Ay MR "Leveraging deep neural networks to improve numerical and perceptual image quality in low-dose preclinical PET imaging" Comput Med Imaging Graph Vol. 94, pp 102010 (2021).
 61. Salimi Y, *Shiri I*, Akhavanallaf A, Mansouri Z, Saberi A, Sanaat A, Pakbin M, Askari D, Sandoughdaran S, Sharifipour E, *Arabi H*, and **Zaidi H** "Deep learning-based fully automated Z-axis coverage range definition from scout scans to eliminate overscanning in chest CT scanning" Insights Imaging Vol. 12, No. 1, pp 162 (2021).
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62. Sanaat A, Schooli H, Ferdowsi S, *Shiri I*, Arabi H and **Zaidi H** "DeepTOFSino: A deep learning model for synthesizing full-dose TOF bin sinograms from their corresponding low-dose TOF bins" Neuroimage Vol. 245, pp 118697 (2021).
 63. Khodabakhshi Z, Amini M, Mostafaei S, Avval AH, Nazari M, Oveisi M, Shiri I and **Zaidi H** "Overall survival prediction in renal cell carcinoma patients using Computed Tomography radiomics and clinical information" J Dig Imaging Vol. 34, No. 5, pp 1086-1098 (2021).

64. Amini M, Nazari M, *Shiri I*, Hajianfar G, Deevband MR, Abdollahi H, *Arabi H*, *Rahmim A* and **Zaidi H** "Multi-level multi-modality (PET and CT) fusion radiomics: Prognostic modeling for non-small cell lung carcinoma" Phys Med Biol Vol. 66, No. 20, pp 205017 (2021).
65. Shiri I, Arabi H, Sanaat A, Janebi E, Becker M and **Zaidi H** "Fully automated gross tumour volume delineation from PET in head and neck cancer using deep learning algorithms" Clin Nucl Med Vol. 46, No. 11, pp 872-883 (2021).
66. Sanaat A, Mirsadeghi E, Razeghi B, Ginovart N and **Zaidi H** "Fast dynamic brain PET imaging using stochastic variational prediction for recurrent frame generation" Med Phys Vol. 48, No. 9, pp 5059-5071 (2021).
67. Khodabakhshi Z, Mostafaei S, Arabi H, Oveisi M, Shiri I and **Zaidi H** "Non-small cell lung carcinoma histopathological subtype phenotyping using high-dimensional multinomial multiclass CT radiomics signature" Comput Biol Med Vol. 136, pp 104752 (2021).
68. Ghabrial A, Franklin D and **Zaidi H** "A Monte Carlo simulation study of scatter fraction and the impact of patient BMI on scatter in long axial field-of-view PET scanners" Z Med Phys Vol. 31, No. 3, pp 305-315 (2021).
69. Akhavanallaf A, Mohammadi R, Shiri I, Salimi Y, Arabi H and **Zaidi H** "Personalized brachytherapy dose reconstruction using deep learning" Comput Biol Med Vol. 136, pp 104755 (2021).
70. Shayesteh S, *Nazari M*, Salahshour A, *Sandoughdaran S*, *Hajianfar G*, *Khateri M*, *Joybari AY*, *Jozian F*, *Feyzabad SHF*, *Arabi H*, *Shiri I* and **Zaidi H** "Treatment response prediction using MRI-based pre-, post- and delta-radiomic features and machine learning algorithms in colorectal cancer" Med Phys Vol. 48, No. 7, pp 3691-3701 (2021).
71. Arabi H and **Zaidi H** "Deep learning-based metal artefact reduction in PET/CT imaging" Eur Radiol Vol. 31, No. 8, pp 6384-6396 (2021).
72. Ghelich Oghli M, Moradi S, Sirjani N, Gerami R, Ghaderi P, Shabanzadeh A, **Shiri I**, Arabi H and **Zaidi H** "Automatic fetal biometry prediction using a novel deep convolutional network architecture" Phys Med Vol. 88, pp 127-137 (2021).
73. Arabi H and **Zaidi H** "Assessment of deep learning-based PET attenuation correction frameworks in the sinogram domain" Phys Med Biol Vol. 66, No. 14, pp 145001 (2021).
74. Lohrabian V, Kamali-Asl A, Ghadiri Harvani H, Hosseini Aghdam SR, Arabi H and **Zaidi H** "Comparison of the x-ray tube spectrum measurement using BGO, NaI, LYSO, and HPGe detectors in a preclinical mini-CT scanner: Monte Carlo simulation and practical experiment" Rad Phys Chem Vol. 189, pp 109666 (2021).
75. Mostafapour S, Gholamiankhah F, Dadgar H, Arabi H and **Zaidi H** "Feasibility of deep learning-guided attenuation and scatter correction of whole-body ⁶⁸Ga-PSMA PET studies in the image domain" Clin Nucl Med Vol. 46, No. 8, pp 609-615 (2021).

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77. Mohammadi R, Salehi M, Shokatian I, *Arabi H, Shiri I* and **Zaidi H** "Deep learning-based auto-segmentation of organs at risk in high-dose rate brachytherapy of cervical cancer" Radiother Oncol Vol. 159, pp 231-240 (2021).
78. Akhavanallaf A, Shiri I, Arabi H and **Zaidi H** "Whole-body voxel-based internal dosimetry using deep learning" Eur J Nucl Med Mol Imaging Vol. 48, No. 3, pp 670-682 (2021).
79. Zanca F, Hernandez-Giron I, Avanzo M, Guidi G, Crijns W, Diaz O, Kagadis GC, Rampaldo O, Løne PI, Ken S, Colgan N, **Zaidi H**, Zakaria G, M. Kortensniemi "Expanding the medical physicist curricular and professional programme to include artificial intelligence" Phys Med Vol. 83, pp 174-183 (2021).
80. Radnia A, Abdollahzadeh H, Teimourian B, Farahani MH, Akbari ME, **Zaidi H** and Ay MR "Development and characterization of an all-in-one gamma probe with auto peak detection for sentinel lymph node biopsy based on NEMA NU3-2004 standard" Ann Nucl Med Vol. 35, No. 4, pp 438-446 (2021).
81. Baldock C, Basran PS and **Zaidi H** "An increase in retractions of research publications is an issue for Medical Physics" Med Phys Vol. 48, No. 3, pp 927-930 (2021).
82. **Shiri I**, Sorouri M, Geramifar P, Nazari M, Abdollahi M, Salimi Y, Khosravi B, Askari D, Aghaghazvini L, Hajianfar G, Kasaeian A, Abdollahi H, Arabi H, Rahmim A, Radmard AR and **Zaidi H** "Machine learning-based prognostic modelling using clinical data and quantitative radiomic features from chest CT images in COVID-19 patients" Comput Biol Med Vol. 132, pp 104304 (2021).
83. **Shiri I**, Akhavanallaf A, Sanaat A, Askari D, Salimi Y, Mansouri Z, Shayesteh SP, Hasanian M Rezaei-Kalantari K, Salahshour A, Sandoughdaran S, Abdollahi H, Arabi H and **Zaidi H** "Ultra-low dose chest CT imaging of COVID-19 patients using deep neural networks" Eur Radiol Vol. 31, No. 3, pp 1420-1431 (2021).
84. Arabi H and **Zaidi H** "Non-local mean denoising using multiple PET reconstructions" Ann Nucl Med Vol. 35, No. 2, pp 176-186 (2021).

Frequently cited paper 2022 – Annals of Nuclear Medicine

85. Wang Y, Chen G, Tao X, Bian Z, Zeng D, **Zaidi H**, He J, Huang J and Ma J "Helical CT reconstruction from sparse-view data through exploiting the 3D anatomical structure sparsity" IEEE Access Vol. 9, pp 15200-15211 (2021).
86. Surti S, Del Guerra A and **Zaidi H** "Total-body PET is ready for prime time" Med Phys Vol. 48, No. 1, pp 3-6 (2021).
87. *Nazari M, Shiri I* and **Zaidi H** "Radiomics-based machine learning model to predict risk of death within 5-years in clear cell renal cell carcinoma patients" Comput Biol Med Vol. 129, pp 104135 (2021).

b. ARTICLES DE REVUES PUBLIÉS OU ACCEPTÉS DANS DES JOURNAUX À POLITIQUE ÉDITORIALE (2021-2023)

- b.1 Rahmim A, Lodge MA, Karakatsanis N, Panin VY, Zhou Y, McMillan A, Cho S, **Zaidi H**, Casey ME and Wahl RL "Dynamic whole-body PET imaging: principles, potentials and applications" Eur J Nucl Med Mol Imaging Vol. 46, No. 2, pp 501-518 (2019). [IF=7.704]
- b.2 Lovblad KO, Bouchez L, Wetzel S, Altrichter S, Ratib O, **Zaidi H** and Vargas MI "PET/CT in neuroradiology" Clin Transl Neurosci July-Dec, DOI 10.1177/2514183X19868147 pp 1-7 (2019).
- b.3 Alavi A, Houshmand S, Werner T and **Zaidi H** "Potential applications of PET-based novel quantitative techniques in pediatric diseases and disorders" PET Clinics Vol. 15, No. 3, pp 281-284 (2020).
- b.4 Abdollahi H, **Shiri I**, Bevelacqua JJ, Jafarzadeh A, Rahmim A and **Zaidi H**, Mortazavi SAR, Mortazavi SMJ "Low dose radiation therapy and convalescent plasma: How a hybrid method may maximize benefits for COVID-19 patients" J Biomed Phys Eng Vol. 10, No. 4, pp 384-394 (2020).
- b.5 Amirrashedi M, **Zaidi H** and Ay MR "Towards quantitative small-animal imaging on hybrid PET/CT and PET/MRI systems" Clin Trans Imaging Vol. 8, No. 4, pp 243-263 (2020). [IF=2.506]
- b.6 Amirrashedi M, **Zaidi H** and Ay MR "Advances in preclinical PET instrumentation" PET Clinics Vol. 15, No. 4 pp 403-426 (2020).
- b.7 Arabi H and **Zaidi H** "Applications of artificial intelligence and deep learning in molecular imaging and radiotherapy" Eur J Hybrid Imaging Vol. 4, No. 1, pp 17 (2020).
- b.8 Arabi H, Akhavanallaf A, Sanaat A **Shiri I**, and **Zaidi H** "The promise of artificial intelligence and deep learning in PET and SPECT imaging" Phys Med Vol. 83, pp 122-137 (2021). [IF=2.685]
- b.9 **Zaidi H** and El Naqa I "Quantitative molecular positron emission tomography imaging using advanced deep learning techniques" Annu Rev Biomed Eng Vol. 23, pp 249-276 (2021). [IF=15.541]
- b.10 Bouchareb Y, Moradi Khaniabadi P, Al Kindi F, Al Dhuhli H, Shiri I, Zaidi H, Rahmim A "Artificial intelligence-driven assessment of radiological images for COVID-19" Comput Biol Med Vol. 136, pp 104665 (2021). [IF=4.589]
- b.11 Le Guevelou J, Achard V, Mainta I, **Zaidi H**, Garibotto V, Lazorzef I, Sargos P, Menard C Zilli T, "PET/CT-based salvage radiotherapy for recurrent prostate cancer after radical prostatectomy: impact on treatment management and future directions" Front Oncol Vol. 11, pp 742093 (2021). [IF=6.244]
- b.12 Akhavanallaf A, Fayad H, Salimi Y, Aly A, Kharita H, Al Naemi H and **Zaidi H** "An update on computational anthropomorphic anatomical models" Dig Health Vol. 8, pp 2055207622111941 (2022). [IF=4.687]

- b.13 Manafi-Farid R, Askari E, Shiri I, Asadi M, Khateri M, Pirich C, **Zaidi H** and Beheshti M "[¹⁸F]-FDG PET/CT radiomics and artificial intelligence in lung cancer: Technical aspects and potential clinical applications" Sem Nucl Med Vol. 52, No. 6, pp 759-780 (2022). [IF=4.446]
- b.14 Farhadi F, Rajagopal JR, Veziroglu EM, Abdollahi H, Shiri I, Nikpanah M, **Zaidi H**, Rahmim A and Saboury B "Multi-scale temporal imaging: From micro- and meso- to macro-scale-time nuclear medicine" PET Clin Vol. 18, No. 1, pp 135-148 (2023).
- b.15 Puri T, Frost ML, Moore AEB, Choudhury A, Vinjamuri S, Mahajan A, Fynbo C, Vrist M, Thiel J, Kairemo K, Wong J, **Zaidi H**, Revheim M-E, Werner TJ, Alavi A, Cook GJR, Blake GM "Utility of a simplified [¹⁸F] sodium fluoride PET imaging method to quantify bone metabolic flux for a wide range of clinical applications" Front Endocrinol Vol. 14, pp 1236881 (2023).
- b.16 Becker M, de Vito C, Dulguerov N and **Zaidi H** "PET/MR imaging in head and neck cancer" Magn Reason Imaging Clin N Am Vol. 31, No. 4, pp 539-564 (2023).
- b.17 Arabi H and **Zaidi H** "Recent advances in Positron Emission Tomography/Magnetic Resonance imaging technology" Magn Reason Imaging Clin N Am Vol. 31, No. 4, pp 503-515 (2023).
- b.18 Sanaat A, Amini M, Arabi H and **Zaidi H** "The quest for multifunctional and dedicated PET instrumentation with irregular geometries" Ann Nucl Med (2023) *in press*
- c. **ÉDITORIAUX PUBLIÉS OU ACCEPTÉS DANS DES JOURNAUX À POLITIQUE ÉDITORIALE (2021-2023)**
 - c.1 **Zaidi H**, Surti S and Alavi A "Innovations in organ-specific PET instrumentation: Quo Vadis" PET Clin Vol. 18, No 1, pp xi-xii (2024).
 - c.2 Zanca F, Avanzo M, Colgan N, Crijns W, Guidi G, Hernandez-Giron I, Kagadis GC, Diaz O, **Zaidi H**, Russo P, Toma-Dasu I, M. Kortensniemi "Focus Issue: Artificial Intelligence in Medical Physics" Phys Med Vol. 83, pp 287-291 (2021).
 - c.3 Abdollahi H, Atashzar M, **Shiri I**, Rahmim A and **Zaidi H** "A theranostic approach based on radiolabeled antiviral drugs, antibodies and CRISPR associated proteins for early detection and treatment of SARS-CoV-2 disease" Nucl Med Comm Vol. 41, No. 9, pp 837-840 (2020).
 - c.4 **Zaidi H**, Torigian D and Alavi A "Recent advances in imaging with PET, CT and MRI techniques" PET Clinics Vol. 15, No. 4, pp xv-xvi (2020).
- d. **LIVRES**
 - d.1 **Zaidi H**, Ed. "*Therapeutic applications of Monte Carlo calculations in nuclear medicine*" (Institute of Physics Publishing, Bristol, UK) 2nd Edition, 2022, ISBN: 9780750326926, Ebook ISBN: 9780750326940.

▪ **Activités diverses:**

(charges administratives, charges de direction, charges de personnel, participation à des commissions, services à la Cité,

etc.) en effectuant cette démarche sur le site <https://rli.unige.ch> avec indication du nom de votre supérieur hiérarchique direct en fin de procédure.

- Responsable du laboratoire d'Instrumentation PET et Neuroimagerie (LINE), un groupe de recherche d'environ 10-12 personnes
- Membre du Conseil Académique du Département de Radiologie et Informatique Médicale
- Membre du Geneva University Neurocenter, Université de Genève
- **Activités accessoires ou extérieures :** (liste des activités accessoires ou extérieures effectuées pendant la durée du mandat)

2011-présent	Professor (Hon) in Medical Physics, Department of Nuclear Medicine and Molecular Imaging, University of Groningen, Groningen, Netherlands.
2015-présent	Adjunct Professor in Medical Physics and Molecular Imaging, Department of Clinical Physiology and Nuclear Medicine, University of Southern Denmark, Odense, Denmark.
2016-2018	Adjunct Professor in Medical Physics, Institute of Medical Science and Technology (IMST), Shahid Beheshti University, Tehran, Iran.
2019-présent	Professeur invité, Tehran University of Medical Sciences, Tehran, Iran.

Activités Editoriales (2021-2023)

- Founding Editor-in-Chief (Scientific), *The British Journal of Radiology (BJR) | Open* (2019)
- Deputy Editor, *Medical Physics* (Official Journal of the AAPM) (2021-now)
- *Moderator of Point/Counterpoint section, Medical Physics* (Official Journal - American Association of Physicists in Medicine - AAPM) (2018-2020)
- Guest Editor with Suleman Surti, & Abass Alavi, *PET Clinics*, Special issue on "*Advances in organ-specific PET instrumentation and their clinical and research applications*", Vol. 18, No. 1, 2024.
- Guest co-Editor with A. Dasu, J. Dhont, I. El Naqa, M. Fix, P. Gilligan, O. Jäkel, AL. Plaza, L. Marcu, M. Mazonakis, C. McGarty, O. Rampado, L. Strigari, J. Öden, and I. Toma-Dasu, *Physica Medica*, Special issue on "*European Conference on Medical Physics (ECMP 2022)*", 2023, under preparation
- Guest co-Editor with F. Zanca, I. DeBroglie, M. Hatt, A. Michele, G. Guidi, G. Kagadis, M. Kortseniemi, N. Colgan, G. Mettivier, O. Diaz and W. Crijns, *Physica Medica*, Special issue on "*Artificial intelligence in medical physics for diagnostic and therapy*", Vol. 79, 2021
- Guest Editor with Drew Torigian, & Abass Alavi, *PET Clinics*, Special issue on "*Recent Advances in Imaging with PET, CT and MR Techniques*", Vol. 15, No. 4, 2020.

Commissions scientifiques (2021-2023)

- Dés 2017 Expert for evaluation of research proposals, French National Alliance for Life and Health Sciences (AVIESAN), France.
- Dés 2017 Expert for evaluation of research proposals, *Willy Gepts Research Foundation, University Hospital Brussels*, Brussels, Belgium.
- Dés 2017 Expert for evaluation of research proposals, *Research Foundation – Flanders (FWO)*, Brussels, Belgium.
- Dés 2017 Expert for evaluation of research proposals, *ETH Zurich Personalized Health and Related Technologies (PHRT)*, Switzerland.
- Dés 2017 Consultant, Committee on appointments and promotions, University of Dammam, Saudi Arabia.
- Dés 2017 Member, Middle East Affairs Subcommittee, American Association of Physicists in Medicine (AAPM).
- Dés 2017 *Radiogenomics Consortium (RGC)*.
- Dés 2018 Member, Imaging Physics Committee, American Association of Physicists in Medicine (AAPM).
- Dés 2018 Member, AAPM Working Group for Non-clinical Professionals, *American Association of Physicists in Medicine (AAPM)*.
- Dés 2018 Member, AAPM Task Group No. **313 - Task Group on Nuclear Medicine Shielding Requirements**, *American Association of Physicists in Medicine (AAPM)*.
- Dés 2018 Expert for evaluation of research proposals, *King Fahd University of Petroleum and Minerals (KFUPM)*, Dammam, Saudi Arabia.
- Dés 2019 Member, **Work Group (WG) on Artificial Intelligence**, *European Federation of Organizations for Medical Physics (EFOMP)*.
- Dés 2019 Member, Imaging Physics Committee (IPC), *American Association of Physicists in Medicine (AAPM)*.
- Dés 2019 Member, Radiomics subcommittee (RSC), *American Association of Physicists in Medicine (AAPM)*.
- Dés 2019 Member, Machine learning subcommittee (MLSC), *American Association of Physicists in Medicine (AAPM)*.
- Dés 2019 Member, Committee on appointments and promotions, Department of Radiation Oncology, Augusta University, Augusta, USA.
- Dés 2019 Member, of the Scientific and Technological Advisory Panel (STAP), Shenzhen Precision Medical Imaging Large Facility, Shenzhen, China.
- Dés 2019 Associate Member, *Quantitative Imaging Network (QIN)*, National Cancer Institute (USA)
- Dés 2019 Expert for evaluation of research proposals, *Ludwig Boltzmann Gesellschaft (LBG)*, Austria

- Dés 2019 Expert for evaluation of research proposals, “la Caixa” Banking Foundation – Health Research Programme, Barcelona, Spain.
- Dés 2019 Member, Council of Nuclear Medicine Science and technology (CNMST), (India).
- Dés 2019 Member of the International Medical Physics Certification Board (IMPCB), Accreditation Committee#1.
- Dés 2020 Member, IEEE Nuclear and Plasma Society (NPSS) Fellows evaluation committee.
- Dés 2020 Member, AIMBE Biomedical Imaging and Instrumentation Fellows evaluation committee.
- Dés 2022 Member, European Board for Accreditation in Medical Physics (EBAMP)



Zaidi/Habib



FONCTION Professeur ordinaire

Nom et prénom du/de la titulaire	ZAIDI Habib
Taux d'activité ou heures de cours (selon la fonction)	20% bénévole
Faculté, école, institut	Faculté de médecine
Section ou département	Département de radiologie et informatique médicale
Nom et prénom du responsable hiérarchique	GARIBOTTO Valentina

1. ENSEIGNEMENT ET ENCADREMENT DES ETUDIANTS

Taux consacré 20%

Enseignement prégrade

- Bachelor en médecine: 2e année: Module 2 Compétences cliniques/ Radiologie 3 : Médecine nucléaire : scintigraphies, PET-CT; responsable de l'activité
- Master en médecine: supervision de travail de master
- Master en neurosciences: supervision de travail de master

Enseignement postgrade

- Séminaires postgrades
- Supervision de thèses de doctorat (PhD)
- Supervision d'assistants post-doctorants
- Supervision de Maître assistants

2. RECHERCHE

Taux consacré 60%

- Recherche dans le domaine de l'amélioration de la qualité, l'optimisation des protocoles d'imagerie et de quantification en PET-CT et PET-IRM utilisation l'intelligence artificielle., la simulation des systèmes d'imagerie PET et CT par la méthode de Monte Carlo pour les calculs dosimétriques mais aussi sur la reconstruction, l'analyse et le traitement des images médicales multimodales. Liste des Fonds :
- 2024-2030 EEC Horizon PREMIO COLLAB 101136812 "Personalised response monitoring in oncology: Co-creating clinical trials in advanced breast cancer", Total 7'999'921 €, Co-PI (419'875 € perçu)
- 2022-2024 EEC ATTRACT Phase 2 POSICS-2 "Position-sensitive SiPMs compact and scalable Beta-camera", Total 500'000 €, Co-PI 150'000 € perçu
- 2020-2025 Private Fondation of Geneva University Hospital CONFIRM RC06-01, "A high spatial and temporal resolution PET scanner dedicated for prostate cancer imaging", 610'000 CHF, PI 100% perçu
- 2020-2024 EEC EURATOM 2020 NFRP-2019-2020 SINFONIA NFRP-945196, "Radiation risk appraisal for detrimental effects from medical exposure during management of patients with lymphoma or brain tumours", total 5'999'998 €, co-PI 603'988 CHF perçu
- 2020-2024 EEC Eurostars/Eureka Horizon 2020 E! 114021 ProVision "Organ-specific PET scanner for early diagnosis of prostate cancer", Total 2'357'172 €, co-PI 273'776 CHF perçu
- Publier dans des journaux internationaux à politique éditoriale

3. AUTRES TACHES

Taux consacré 20%

3.1. GESTION, ORGANISATION, ADMINISTRATION, DIRECTION

Responsabilité de gestion des fonds de recherche

Gestion des ressources humaines des collaborateurs scientifiques et techniques du laboratoire

La cas échéant, le titulaire peut être remplacé dans ses activités par un autre professeur du Département de radiologie et informatique médicale

Le/la titulaire participera aux tâches de gestion et d'organisation qui sont liées au domaine spécifique qui lui est confié.

3.2. SERVICES A LA CITE

Dans le cadre de son activité, le/la titulaire doit être prêt-e, le cas échéant, à exercer vis-à-vis de la collectivité, une fonction de service rentrant dans la mission de l'Université, ce type d'activité faisant *ipso facto* partie du cahier des charges.

4. AUTRES DISPOSITIONS

Participation à des commissions facultaires et au Collège des professeurs de la faculté

Par sa signature, le/la candidat/e atteste qu'il/elle a pris connaissance de la proposition de cahier des charges afférent au poste mis au concours qui sera soumise à l'autorité de nomination/d'engagement. La proposition de cahier des charges signée ne saurait en aucun cas être considérée comme un acte d'engagement. Seule la décision de nomination et/ou la signature d'un contrat de travail par l'autorité compétente selon le règlement sur le personnel de l'Université valent acte d'engagement.

Date et signature du responsable hiérarchique

le 01/12/2023

Pre Valentina Garibotto
Médecin-Cheffe de service
Service de Médecine Nucléaire
Département Moléculaire
Hôpitaux Universitaires de Genève

Date et signature du/de la titulaire

le 01/12/2023

Habib Zaidi



**UNIVERSITÉ
DE GENÈVE**

FACULTÉ DE MÉDECINE

COMMISSION DE L'ENSEIGNEMENT

SCHWEIZERISCHER AKKREDITIERUNGSRAT
CONSEIL SUISSE D'ACCREDITATION
CONSIGLIO SVIZZERO DI ACCREDITAMENTO
SWISS ACCREDITATION COUNCIL

Filière d'études accréditée selon la
LEHE & LPMéd 2019-2026

A QUI DE DROIT

CERTIFICAT

En l'absence d'évaluation nominative et individuelle par les étudiant-e-s pour des raisons fonctionnelles, les soussignés certifient que le Professeur Habib ZAIDI a prodigué de l'enseignement pré-grade dans le curriculum Bachelor de la Faculté de médecine. Les unités d'enseignement dans lesquelles le Professeur Habib ZAIDI a enseigné sont évaluées par les étudiant-e-s et cette évaluation est jointe au présent certificat.

Genève, décembre 2023

Pr Marc Chanson
Président du programme Bachelor

Pr Mathieu Nendaz
Vice-doyen

Unité Respiration

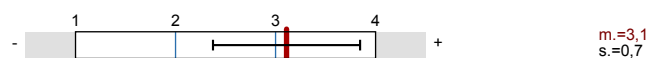
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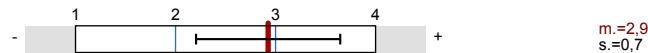
Indicateurs globaux

Index global

1. Evaluation globale



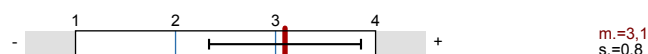
2. Evaluation générale de cette unité



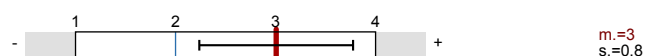
3. Sciences médicales de base



4. Compétences cliniques



5. Evaluation en fin d'unité



Directive de qualité

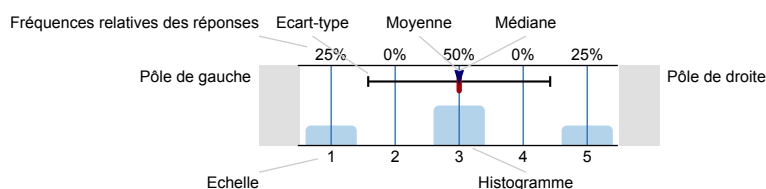
	Poids	Items sans déduction	Résultat	
Evaluation globale	20%	1de1	31,5%	
Evaluation générale de cette unité	15%	4de4	79,9%	
Sciences médicales de base	40%	20de20	71,7%	
Compétences cliniques	10%	5de5	86,4%	
Evaluation en fin d	15%	6de6	52,2%	

Résultat global: 63,4%

Résultats des questions prédéfinies

Légende

Question



n = nombre
m = moyenne
md = Médiane
s = Ecart-type
ab = abstention



Index de qualité

Description des symboles de qualité



Moyenne au-dessous de la directive de qualité.



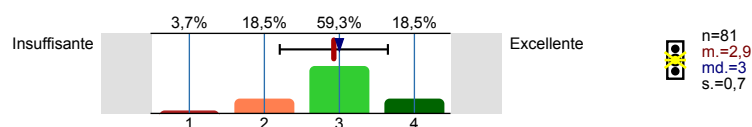
Moyenne dans la marge de conformité.



Moyenne conforme ou au-delà de la directive de qualité.

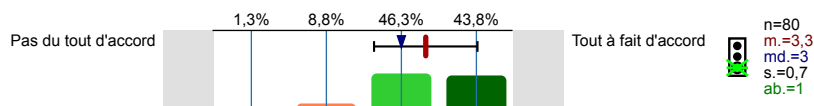
1. Evaluation globale

1.1) Votre appréciation globale

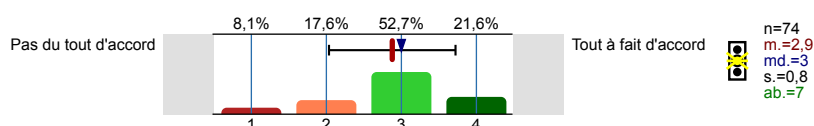


2. Evaluation générale de cette unité

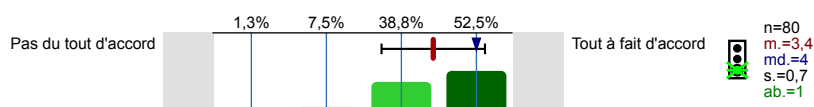
2.1) Les problèmes m'ont permis d'acquérir et d'intégrer des connaissances de sciences fondamentales, cliniques et psychosociales



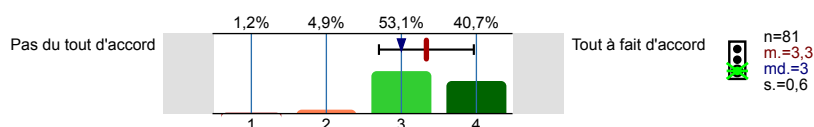
2.2) Les références bibliographiques sont appropriées à la résolution des problèmes



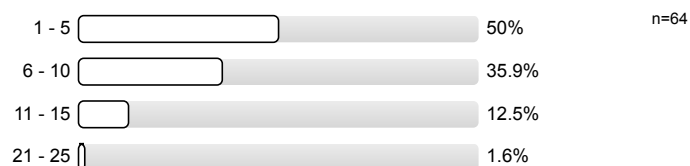
2.3) Les cours et sessions interactives m'ont aidé à mieux comprendre la matière en relation avec les problèmes



2.4) J'ai beaucoup appris au cours de cette Unité

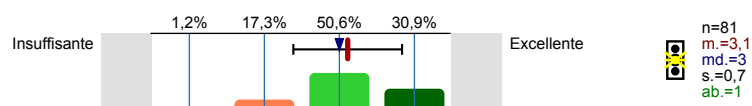


2.5) En moyenne, combien d'heures environ d'étude individuelle avez-vous passées par problème?

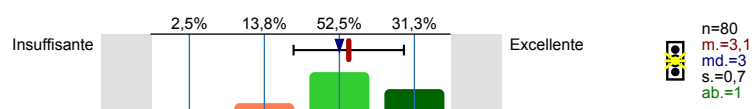


3. Sciences médicales de base

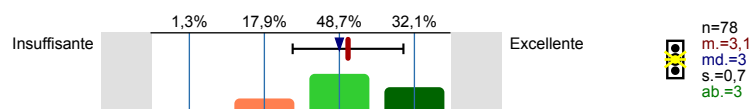
3.1) Session APP Problème 1: Un coureur qui souffle



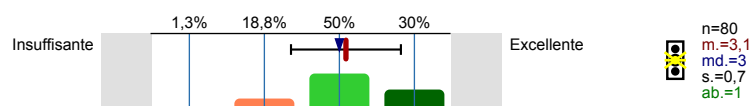
3.3) Session APP Problème 2: Gabriel est à bout de souffle



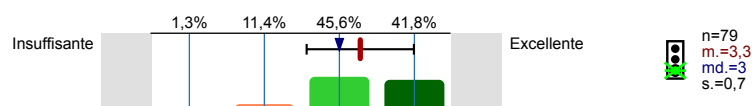
3.5) Session APP Problème 3: Le souffle revient et puis repart

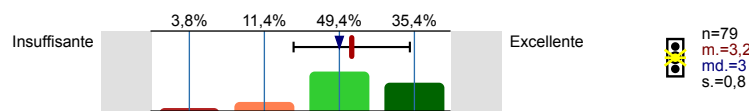
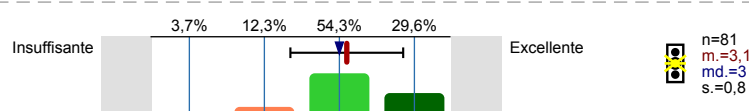
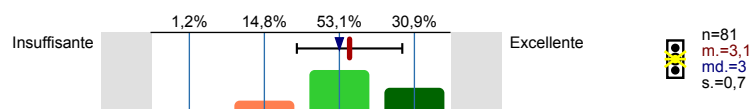
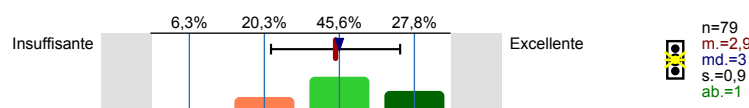
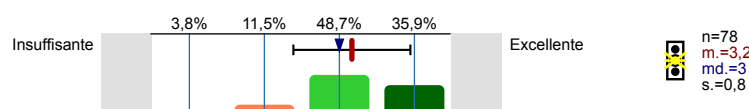
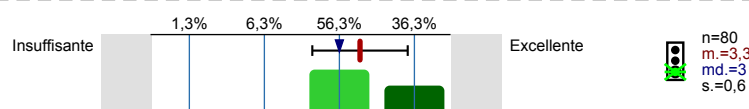
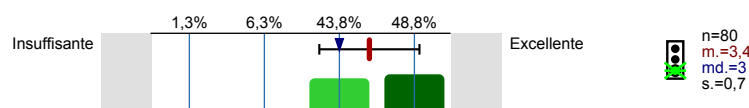
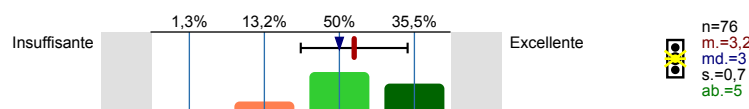
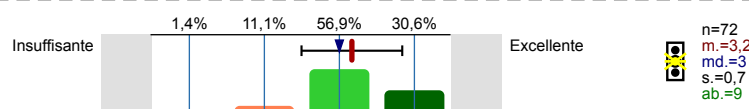
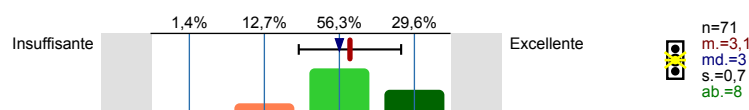
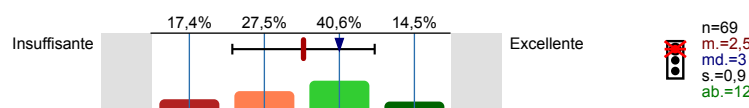
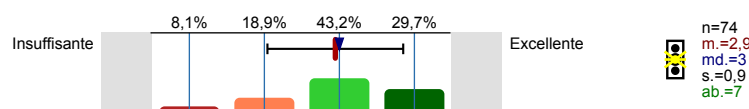
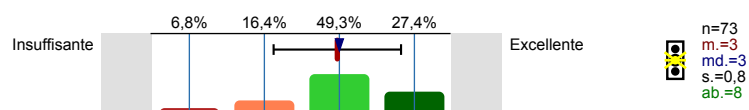


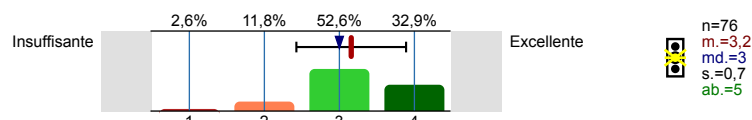
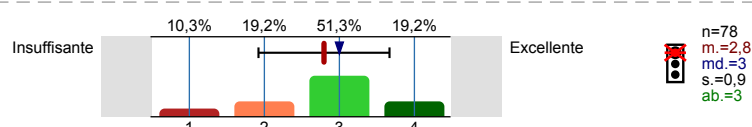
3.7) Session APP Problème 4: Vous prendrez bien encore un peu de crème fraîche sur votre dessert ?



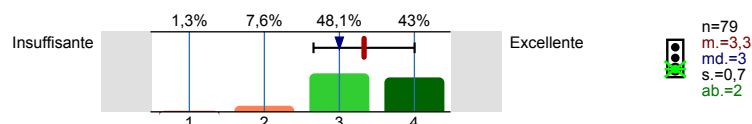
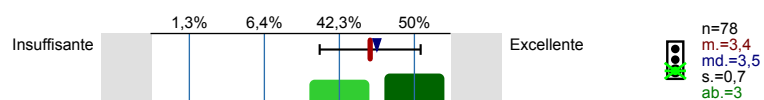
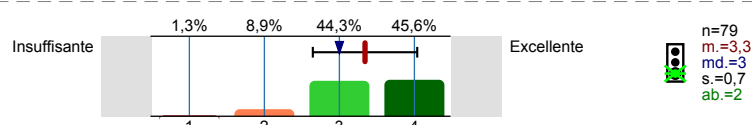
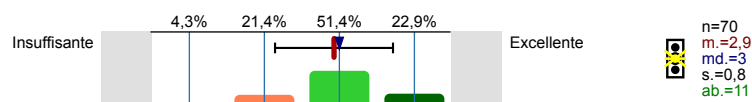
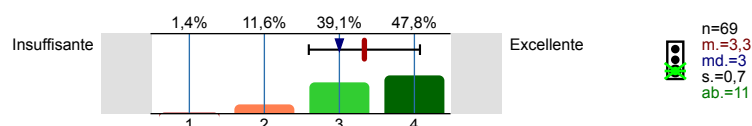
3.9) Cours1 Mécanique respiratoire : statique



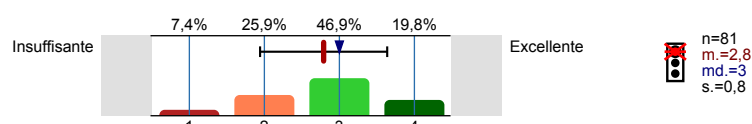
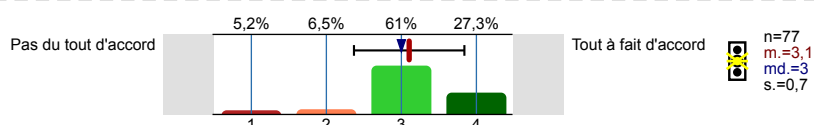
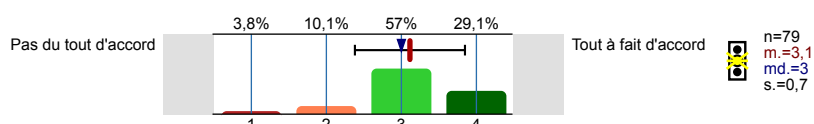
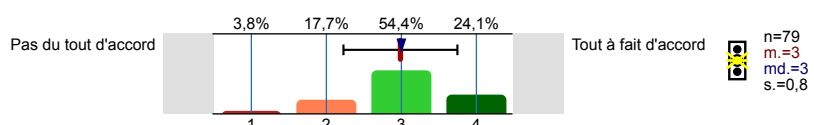
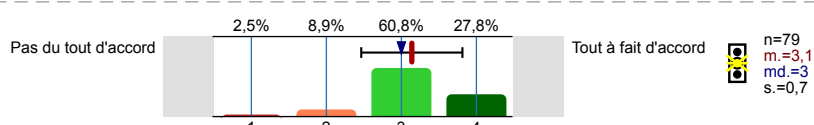
3.11) **Cours2 Mécanique respiratoire : dynamique**3.13) **Cours3 Circulation pulmonaire**3.15) **Cours4 Génétique médicale**3.17) **Cours5 Echanges gazeux**3.19) **Cours6 Cancer pulmonaire**3.21) **Cours7 Assistance respiratoire**3.23) **Cours8 Contrôle de la respiration**3.25) **Session interactive 1 Séminaire de radiologie pour la radio de thorax normal**3.27) **Session interactive 2 Séminaire de radiologie du CT scan thoracique pathologique 1**3.29) **Session interactive 3 Séminaire de radiologie du CT scan thoracique pathologique 2**3.31) **TP1 Anatomie normale du système respiratoire**3.33) **TP2 Mesure des volumes pulmonaires**3.35) **TP3 Mécanique respiratoire**

3.37) **TP4 Bases d'histologie du système respiratoire**3.39) **TP5 Bases d'histo-pathologie du système respiratoire**

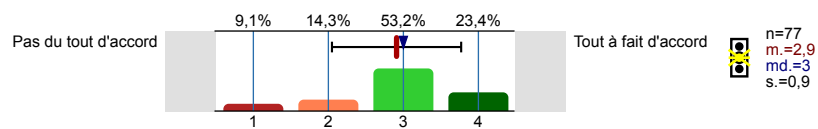
4. Compétences cliniques

4.1) **CC1 Cours d'introduction à la sémiologie respiratoire - Introduction à l'anamnèse lors d'affections pulmonaires et à la sémiologie respiratoire**4.3) **CC2 Séminaire sémiologie respiratoire: révision de la prise d'anamnèse et de l'examen physique ciblés sur un problème respiratoire**4.5) **CC3 Intégration : Problème de dyspnée d'origine cardiaque vs pulmonaire**4.7) **CC4 Radiologie 3: Médecine nucléaire: Scintigraphies, PEC-CT**4.9) **CC5 Réanimation 2: Réanimation cardio-pulmonaire 2: Basic Life Support (BLS) et défibrillation semi-automatique (DSA)**

5. Evaluation en fin d'unité

5.1) **Qualité globale de l'examen**5.2) **Votre appréciation globale**5.3) **L'examen a fait appel à la réflexion**5.4) **Le format d'évaluation était adéquat**5.5) **L'examen a fait appel à la restitution de connaissances**

- 5.6) L'examen était intégratif, faisant appel à des notions vues en APP, TP, et CC



Profil

Département: Respiration
 Référent évaluation: Docteur GASCHÉ-SOCCAL Paola
 Objet: Unité Respiration
 (Nom de l'enquête)

Valeurs utilisées dans la ligne de profil: Moyenne

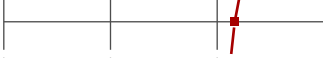
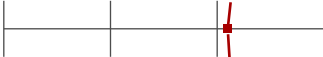
1. Evaluation globale

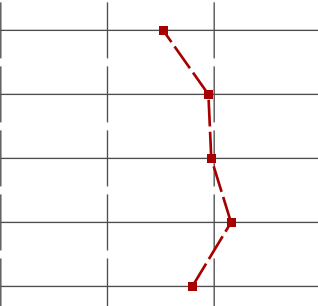
1.1) Votre appréciation globale	Insuffisante		Excellente	n=81	m.=2,9	md.=3,0	s.=0,7
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2. Evaluation générale de cette unité

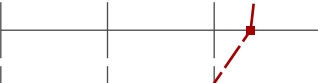
2.1) Les problèmes m'ont permis d'acquérir et d'intégrer des connaissances de sciences fondamentales, cliniques et psychosociales	Pas du tout d'accord		Tout à fait d'accord	n=80	m.=3,3	md.=3,0	s.=0,7
2.2) Les références bibliographiques sont appropriées à la résolution des problèmes	Pas du tout d'accord		Tout à fait d'accord	n=74	m.=2,9	md.=3,0	s.=0,8
2.3) Les cours et sessions interactives m'ont aidé à mieux comprendre la matière en relation avec les problèmes	Pas du tout d'accord		Tout à fait d'accord	n=80	m.=3,4	md.=4,0	s.=0,7
2.4) J'ai beaucoup appris au cours de cette Unité	Pas du tout d'accord		Tout à fait d'accord	n=81	m.=3,3	md.=3,0	s.=0,6

3. Sciences médicales de base

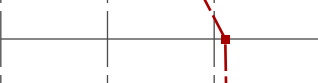
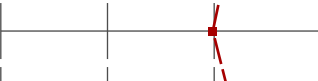
3.1) Session APP Problème 1: Un coureur qui souffle	Insuffisante		Excellente	n=81	m.=3,1	md.=3,0	s.=0,7
3.3) Session APP Problème 2: Gabriel est à bout de souffle	Insuffisante		Excellente	n=80	m.=3,1	md.=3,0	s.=0,7
3.5) Session APP Problème 3: Le souffle revient et puis repart	Insuffisante		Excellente	n=78	m.=3,1	md.=3,0	s.=0,7
3.7) Session APP Problème 4: Vous prendrez bien encore un peu de crème fraîche sur votre dessert ?	Insuffisante		Excellente	n=80	m.=3,1	md.=3,0	s.=0,7
3.9) Cours1 Mécanique respiratoire : statique	Insuffisante		Excellente	n=79	m.=3,3	md.=3,0	s.=0,7
3.11) Cours2 Mécanique respiratoire : dynamique	Insuffisante		Excellente	n=79	m.=3,2	md.=3,0	s.=0,8
3.13) Cours3 Circulation pulmonaire	Insuffisante		Excellente	n=81	m.=3,1	md.=3,0	s.=0,8
3.15) Cours4 Génétique médicale	Insuffisante		Excellente	n=81	m.=3,1	md.=3,0	s.=0,7
3.17) Cours5 Echanges gazeux	Insuffisante		Excellente	n=79	m.=2,9	md.=3,0	s.=0,9
3.19) Cours6 Cancer pulmonaire	Insuffisante		Excellente	n=78	m.=3,2	md.=3,0	s.=0,8
3.21) Cours7 Assistance respiratoire	Insuffisante		Excellente	n=80	m.=3,3	md.=3,0	s.=0,6
3.23) Cours8 Contrôle de la respiration	Insuffisante		Excellente	n=80	m.=3,4	md.=3,0	s.=0,7
3.25) Session interactive 1 Séminaire de radiologie pour la radio de thorax normal	Insuffisante		Excellente	n=76	m.=3,2	md.=3,0	s.=0,7
3.27) Session interactive 2 Séminaire de radiologie du CT scan thoracique pathologique 1	Insuffisante		Excellente	n=72	m.=3,2	md.=3,0	s.=0,7
3.29) Session interactive 3 Séminaire de radiologie du CT scan thoracique pathologique 2	Insuffisante		Excellente	n=71	m.=3,1	md.=3,0	s.=0,7

3.31) TP1 Anatomie normale du système respiratoire	Insuffisante		Excellente	n=69	m.=2,5	md.=3,0	s.=0,9
3.33) TP2 Mesure des volumes pulmonaires	Insuffisante		Excellente	n=74	m.=2,9	md.=3,0	s.=0,9
3.35) TP3 Mécanique respiratoire	Insuffisante		Excellente	n=73	m.=3,0	md.=3,0	s.=0,8
3.37) TP4 Bases d'histologie du système respiratoire	Insuffisante		Excellente	n=76	m.=3,2	md.=3,0	s.=0,7
3.39) TP5 Bases d'histo-pathologie du système respiratoire	Insuffisante		Excellente	n=78	m.=2,8	md.=3,0	s.=0,9

4. Compétences cliniques

4.1) CC1 Cours d'introduction à la sémiologie respiratoire - Introduction à l'anamnèse lors d'affections pulmonaires et à la sémiologie	Insuffisante		Excellente	n=79	m.=3,3	md.=3,0	s.=0,7
4.3) CC2 Séminaire sémiologie respiratoire: révision de la prise d'anamnèse et de l'examen physique ciblés sur un problème respiratoire	Insuffisante		Excellente	n=78	m.=3,4	md.=3,5	s.=0,7
4.5) CC3 Intégration : Problème de dyspnée d'origine cardiaque vs pulmonaire	Insuffisante		Excellente	n=79	m.=3,3	md.=3,0	s.=0,7
4.7) CC4 Radiologie 3: Médecine nucléaire: Scintigraphies, PEC-CT	Insuffisante		Excellente	n=70	m.=2,9	md.=3,0	s.=0,8
4.9) CC5 Réanimation 2: Réanimation cardio-pulmonaire 2: Basic Life Support (BLS) et défibrillation semi-automatique (DSA)	Insuffisante		Excellente	n=69	m.=3,3	md.=3,0	s.=0,7

5. Evaluation en fin d'unité

5.1) Qualité globale de l'examen	Insuffisante		Excellente	n=81	m.=2,8	md.=3,0	s.=0,8
5.2) Votre appréciation globale	Pas du tout d'accord		Tout à fait d'accord	n=77	m.=3,1	md.=3,0	s.=0,7
5.3) L'examen a fait appel à la réflexion	Pas du tout d'accord		Tout à fait d'accord	n=79	m.=3,1	md.=3,0	s.=0,7
5.4) Le format d'évaluation était adéquat	Pas du tout d'accord		Tout à fait d'accord	n=79	m.=3,0	md.=3,0	s.=0,8
5.5) L'examen a fait appel à la restitution de connaissances	Pas du tout d'accord		Tout à fait d'accord	n=79	m.=3,1	md.=3,0	s.=0,7
5.6) L'examen était intégratif, faisant appel à des notions vues en APP, TP, et CC	Pas du tout d'accord		Tout à fait d'accord	n=77	m.=2,9	md.=3,0	s.=0,9

Ligne de profil pour indicateurs

Département: Respiration
 Référent évaluation: Docteur GASCHE-SOCCAL Paola
 Objet: Unité Respiration
 (Nom de l'enquête)

1. Evaluation globale	-					+	m.=2,9	s.=0,7
2. Evaluation générale de cette unité	-					+	m.=3,2	s.=0,7
3. Sciences médicales de base	-					+	m.=3,1	s.=0,8
4. Compétences cliniques	-					+	m.=3,3	s.=0,7
5. Evaluation en fin d'unité	-					+	m.=3,0	s.=0,8

Unité Respiration

Nombre de répondants : 86 (91.5 %)



Indicateurs globaux

Index global

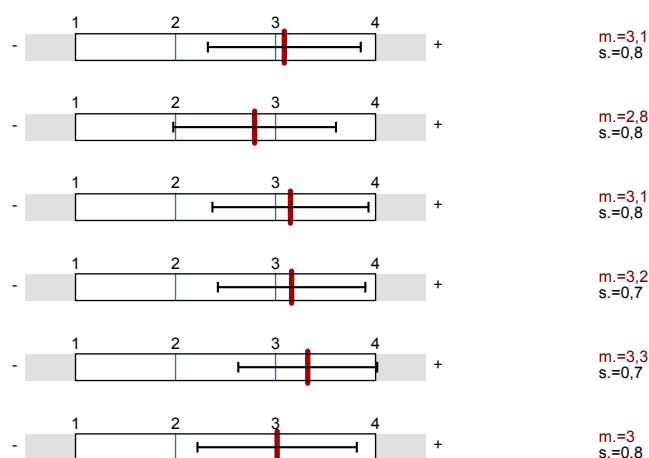
1. Evaluation globale

2. Evaluation générale

3. Sciences médicales de base

4. Compétences cliniques

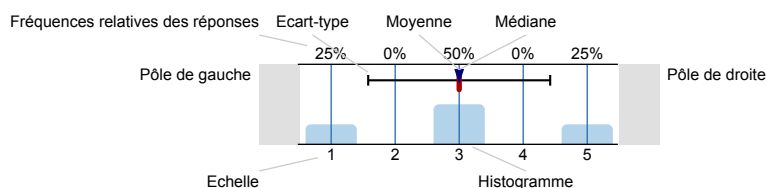
5. Evaluation en fin d'unité



Résultats des questions prédéfinies

Légende

Question



n.= nombre
m.= moyenne
md.=Médiane
s.=Ecart-type
ab.=abstention

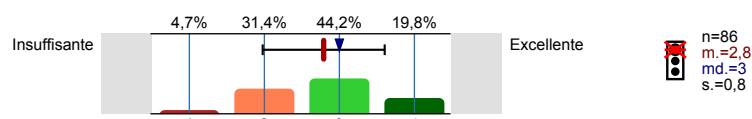


Index de qualité

Description des symboles de qualité : Moyenne au-dessous de la directive de qualité. Moyenne dans la marge de conformité. Moyenne conforme ou au-delà de la directive de qualité.

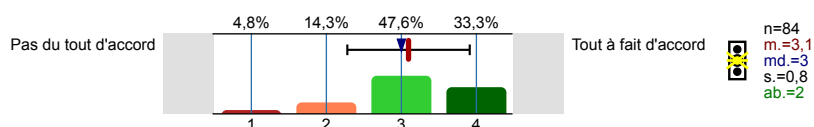
1. Evaluation globale

1.1) Votre appréciation globale

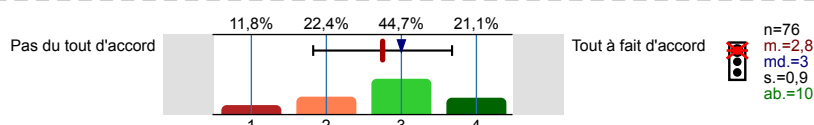


2. Evaluation générale

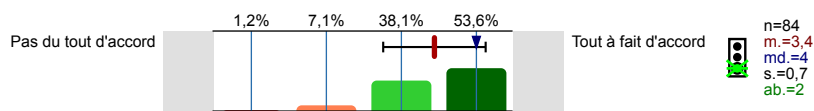
2.1) Les problèmes m'ont permis d'acquérir et d'intégrer des connaissances de sciences fondamentales, cliniques et psychosociales



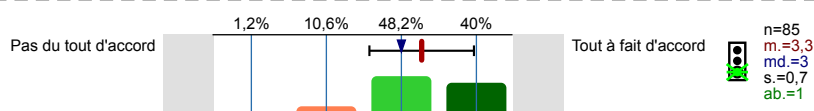
2.2) Les références bibliographiques sont appropriées à la résolution des problèmes



2.3) Les cours et sessions interactives m'ont aidé à mieux comprendre la matière en relation avec les problèmes



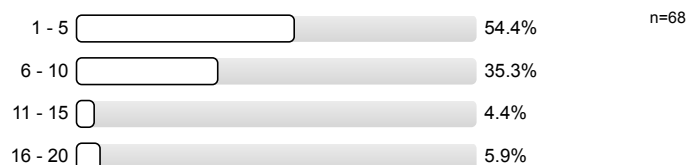
2.4) J'ai beaucoup appris au cours de cette Unité



2.5) J'ai participé à l'examen de contrôle continu en fin d'unité

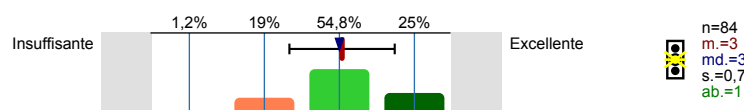


2.6) En moyenne, combien d'heures environ d'étude individuelle avez-vous passées par problème?

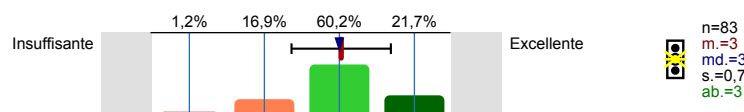


3. Sciences médicales de base

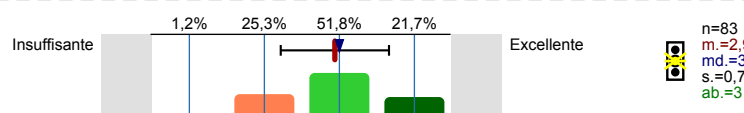
3.1) Session APP Problème 1: Le tabac n'entraîne pas que le cancer



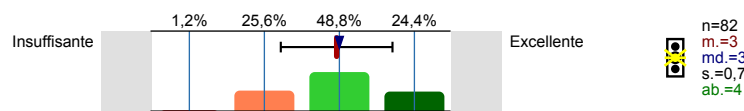
3.3) Session APP Problème 2: Stress, cigarette et cannabis



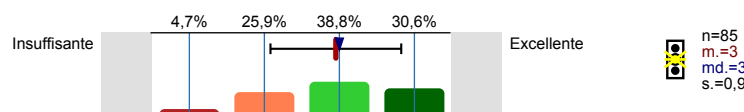
3.5) Session APP Problème 3: A propos de germes et embolies



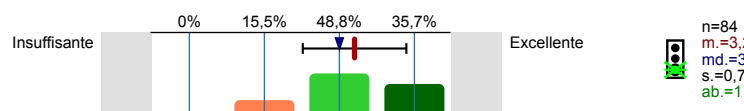
3.7) Session APP Problème 4: Vous prendrez bien encore un peu de crème fraîche sur votre dessert ?



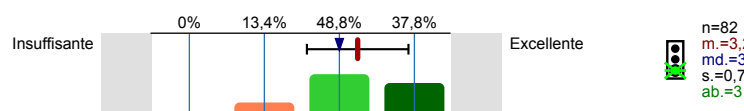
3.9) Cours1 Mécanique ventilatoire

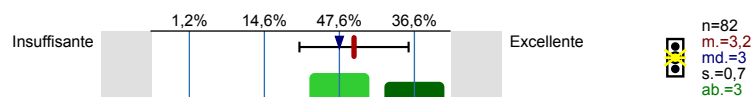
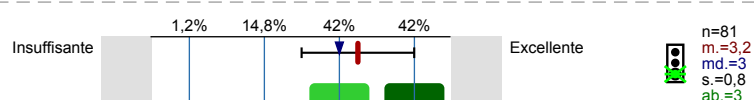
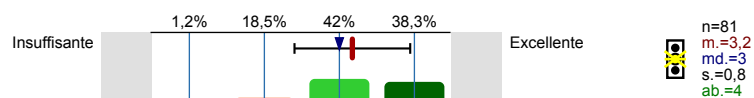
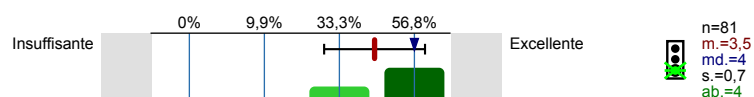
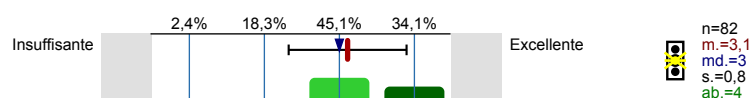
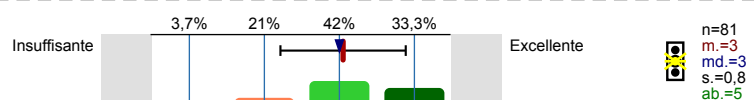
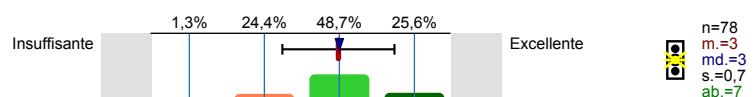
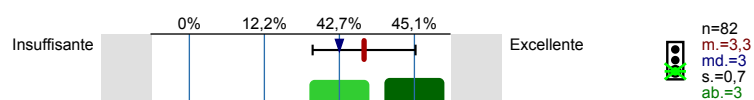
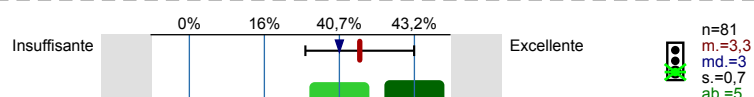
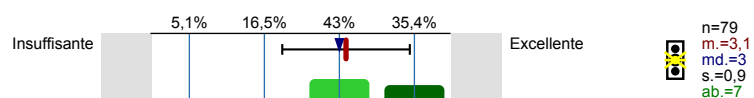
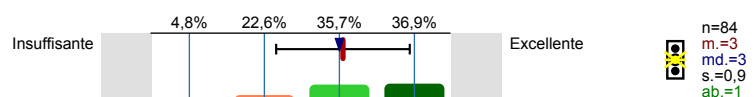
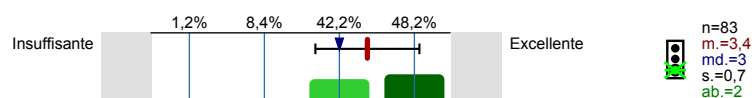
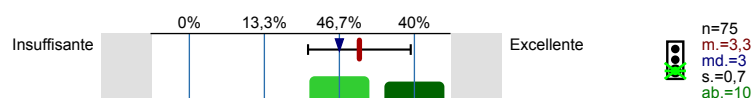


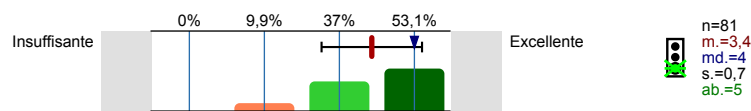
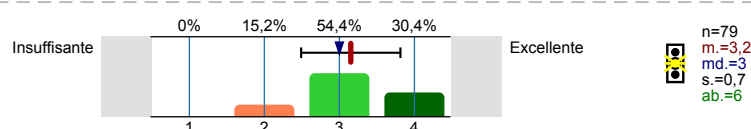
3.11) Cours2 Circulation pulmonaire



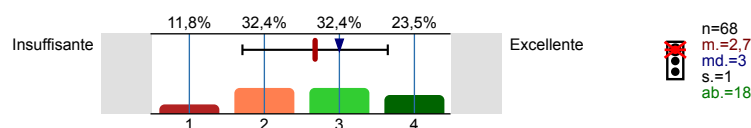
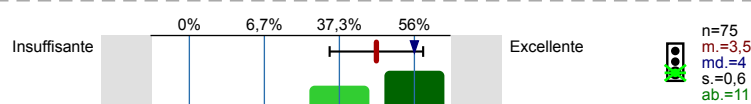
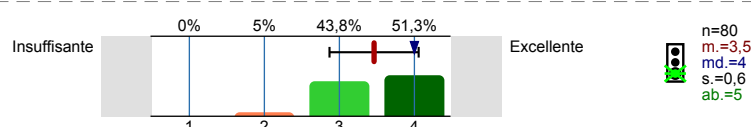
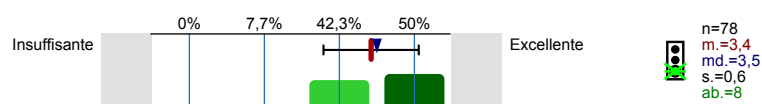
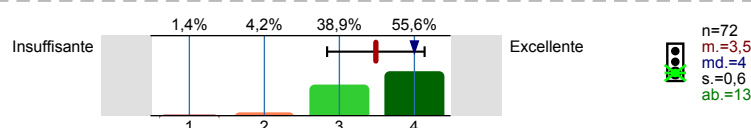
3.13) Cours3 Hématose



3.15) **Cours4** Transport de gaz sanguins3.17) **Cours5** Contrôle de la ventilation3.19) **Cours6** Assistance ventilatoire3.21) **Cours7** Respiration et sommeil3.23) **Cours8** Défenses du poumon3.25) **Cours9** Cancer et poumon3.27) **Cours10** Génétique3.29) **Session interactive 1** Séminaire de radiologie pour la radio de thorax normal3.31) **Session interactive 2** Séminaire de radiologie du CT scan thoracique pathologique 13.33) **Session interactive 3** Séminaire de radiologie du CT scan thoracique pathologique 23.35) **TP1** Mesure, volumes pulmonaires3.37) **TP2** Anatomie normale du système respiratoire3.39) **TP3** Bases d'histologie du système respiratoire

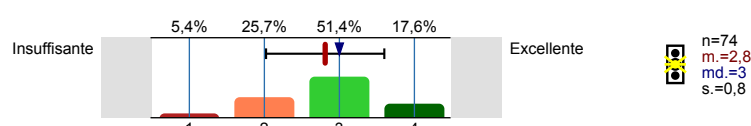
3.41) **TP4** Exploration fonctionnelle respiratoire3.43) **TP5** Bases d'histo-pathologie du système respiratoire

4. Compétences cliniques

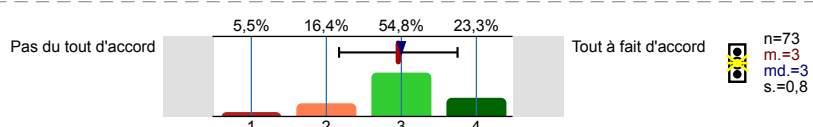
4.1) **CC1** Radiologie 3 : Médecine nucléaire : scintigraphies, PEC-CT4.3) **CC2** Réanimation 2: Réanimation cardio-pulmonaire 2: Basic Life Support (BLS) et défibrillation semi-automatique (DSA)4.5) **CC3** Introduction à la sémiologie respiratoire - Cours : Introduction à l'anamnèse lors d'affections pulmonaires4.7) **CC4** Séminaire sémiologie respiratoire: révision de la prise d'anamnèse et de l'examen physique ciblés sur un problème respiratoire4.9) **CC5** Intégration: problème de dyspnée d'origine cardiaque vs pulmonaire

5. Evaluation en fin d'unité

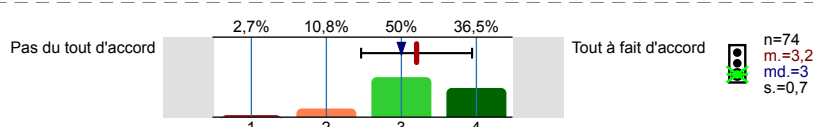
5.1) Qualité globale de l'examen



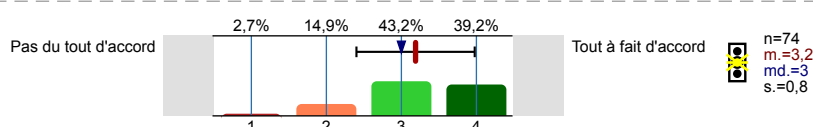
5.2) Votre appréciation globale



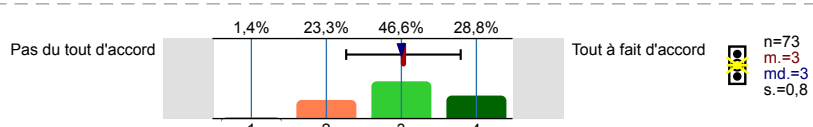
5.3) L'examen a fait appel à la réflexion



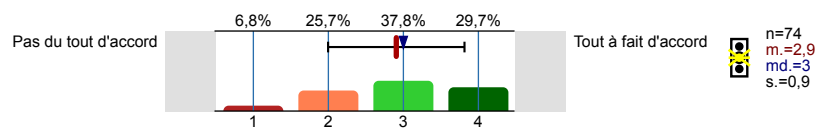
5.4) Le format d'évaluation était adéquat



5.5) L'examen a fait appel à la restitution de connaissances



5.6) L'examen était intégratif, faisant appel à des notions vues en APP, TP, et CC



Profil

Département: Respiration
Référént évaluation: Docteur LADOR Frédéric
Objet: Unité Respiration
(Nom de l'enquête)

Valeurs utilisées dans la ligne de profil: Moyenne

1. Evaluation globale

1.1) Votre appréciation globale	Insuffisante		Excellente	n=86	m.=2,8	md.=3,0	s.=0,8
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2. Evaluation générale

2.1) Les problèmes m'ont permis d'acquérir et d'intégrer des connaissances de sciences fondamentales, cliniques et psychosociales	Pas du tout d'accord		Tout à fait d'accord	n=84	m.=3,1	md.=3,0	s.=0,8
2.2) Les références bibliographiques sont appropriées à la résolution des problèmes	Pas du tout d'accord		Tout à fait d'accord	n=76	m.=2,8	md.=3,0	s.=0,9
2.3) Les cours et sessions interactives m'ont aidé à mieux comprendre la matière en relation avec les problèmes	Pas du tout d'accord		Tout à fait d'accord	n=84	m.=3,4	md.=4,0	s.=0,7
2.4) J'ai beaucoup appris au cours de cette Unité	Pas du tout d'accord		Tout à fait d'accord	n=85	m.=3,3	md.=3,0	s.=0,7

3. Sciences médicales de base

3.1) Session APP Problème 1: Le tabac n'entraîne pas que le cancer	Insuffisante		Excellente	n=84	m.=3,0	md.=3,0	s.=0,7
3.3) Session APP Problème 2: Stress, cigarette et cannabis	Insuffisante		Excellente	n=83	m.=3,0	md.=3,0	s.=0,7
3.5) Session APP Problème 3: A propos de germes et emboles	Insuffisante		Excellente	n=83	m.=2,9	md.=3,0	s.=0,7
3.7) Session APP Problème 4: Vous prendrez bien encore un peu de crème fraîche sur votre dessert ?	Insuffisante		Excellente	n=82	m.=3,0	md.=3,0	s.=0,7
3.9) Cours1 Mécanique ventilatoire	Insuffisante		Excellente	n=85	m.=3,0	md.=3,0	s.=0,9
3.11) Cours2 Circulation pulmonaire	Insuffisante		Excellente	n=84	m.=3,2	md.=3,0	s.=0,7
3.13) Cours3 Hématose	Insuffisante		Excellente	n=82	m.=3,2	md.=3,0	s.=0,7
3.15) Cours4 Transport de gaz sanguins	Insuffisante		Excellente	n=82	m.=3,2	md.=3,0	s.=0,7
3.17) Cours5 Contrôle de la ventilation	Insuffisante		Excellente	n=81	m.=3,2	md.=3,0	s.=0,8
3.19) Cours6 Assistance ventilatoire	Insuffisante		Excellente	n=81	m.=3,2	md.=3,0	s.=0,8
3.21) Cours7 Respiration et sommeil	Insuffisante		Excellente	n=81	m.=3,5	md.=4,0	s.=0,7
3.23) Cours8 Défenses du poumon	Insuffisante		Excellente	n=82	m.=3,1	md.=3,0	s.=0,8
3.25) Cours9 Cancer et poumon	Insuffisante		Excellente	n=81	m.=3,0	md.=3,0	s.=0,8
3.27) Cours10 Génétique	Insuffisante		Excellente	n=78	m.=3,0	md.=3,0	s.=0,7
3.29) Session interactive 1 Séminaire de radiologie pour la radio de thorax normal	Insuffisante		Excellente	n=82	m.=3,3	md.=3,0	s.=0,7

3.31) Session Interactive 2 Séminaire de radiologie du CT scan thoracique pathologique 1	Insuffisante				Excellente	n=81	m.=3,3	md.=3,0	s.=0,7
3.33) Session Interactive 3 Séminaire de radiologie du CT scan thoracique pathologique 2	Insuffisante				Excellente	n=79	m.=3,1	md.=3,0	s.=0,9
3.35) TP1 Mesure, volumes pulmonaires	Insuffisante				Excellente	n=84	m.=3,0	md.=3,0	s.=0,9
3.37) TP2 Anatomie normale du système respiratoire	Insuffisante				Excellente	n=83	m.=3,4	md.=3,0	s.=0,7
3.39) TP3 Bases d'histologie du système respiratoire	Insuffisante				Excellente	n=75	m.=3,3	md.=3,0	s.=0,7
3.41) TP4 Exploration fonctionnelle respiratoire	Insuffisante				Excellente	n=81	m.=3,4	md.=4,0	s.=0,7
3.43) TP5 Bases d'histo-pathologie du système respiratoire	Insuffisante				Excellente	n=79	m.=3,2	md.=3,0	s.=0,7

4. Compétences cliniques

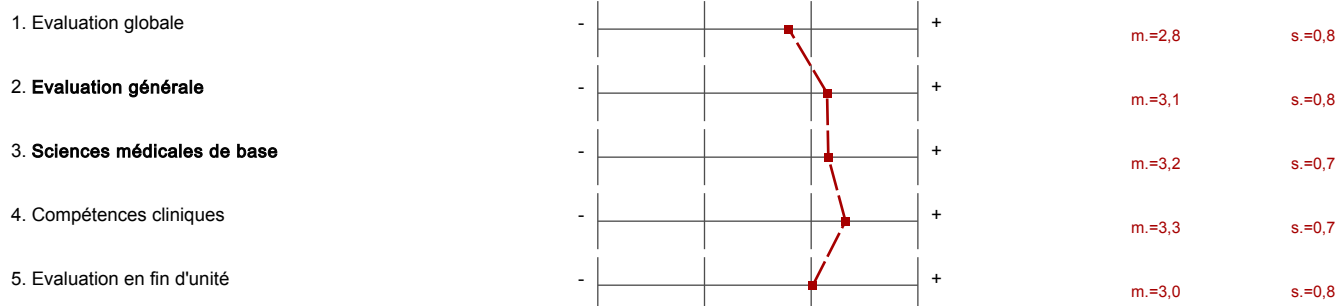
4.1) CC1 Radiologie 3 : Médecine nucléaire : scintigraphies, PEC-CT	Insuffisante				Excellente	n=68	m.=2,7	md.=3,0	s.=1,0
4.3) CC2 Réanimation 2: Réanimation cardio-pulmonaire 2: Basic Life Support (BLS) et défibrillation semi-automatique (DSA)	Insuffisante				Excellente	n=75	m.=3,5	md.=4,0	s.=0,6
4.5) CC3 Introduction à la sémiologie respiratoire - Cours : Introduction à l'anamnèse lors d'affections pulmonaires	Insuffisante				Excellente	n=80	m.=3,5	md.=4,0	s.=0,6
4.7) CC4 Séminaire sémiologie respiratoire: révision de la prise d'anamnèse et de l'examen physique ciblés sur un problème respiratoire	Insuffisante				Excellente	n=78	m.=3,4	md.=3,5	s.=0,6
4.9) CC5 Intégration: problème de dyspnée d'origine cardiaque vs pulmonaire	Insuffisante				Excellente	n=72	m.=3,5	md.=4,0	s.=0,6

5. Evaluation en fin d'unité

5.1) Qualité globale de l'examen	Insuffisante				Excellente	n=74	m.=2,8	md.=3,0	s.=0,8
5.2) Votre appréciation globale	Pas du tout d'accord				Tout à fait d'accord	n=73	m.=3,0	md.=3,0	s.=0,8
5.3) L'examen a fait appel à la réflexion	Pas du tout d'accord				Tout à fait d'accord	n=74	m.=3,2	md.=3,0	s.=0,7
5.4) Le format d'évaluation était adéquat	Pas du tout d'accord				Tout à fait d'accord	n=74	m.=3,2	md.=3,0	s.=0,8
5.5) L'examen a fait appel à la restitution de connaissances	Pas du tout d'accord				Tout à fait d'accord	n=73	m.=3,0	md.=3,0	s.=0,8
5.6) L'examen était intégratif, faisant appel à des notions vues en APP, TP, et CC	Pas du tout d'accord				Tout à fait d'accord	n=74	m.=2,9	md.=3,0	s.=0,9

Ligne de profil pour indicateurs

Département: Respiration
 Référent évaluation: Docteur LADOR Frédéric
 Objet: Unité Respiration
 (Nom de l'enquête)





■ Personal data

- Habib, Zaidi
- 24 December 1967
- Setif, Algeria
- Citizenship: Swiss/Algerian
- 5 Chemin des Champs-Gottreux, 1212 Grand-Lancy, Switzerland
- ORCID: [0000-0001-7559-5297](https://orcid.org/0000-0001-7559-5297)
- E-mail: habib.zaidi@hcuge.ch | habib.zaidi@unige.ch
- Professional address: Geneva University Hospital, Division of Nuclear Medicine & Molecular Imaging, CH-1211 Geneva, Switzerland

■ Education from the most recent to the oldest

Degrees

- **April 2004**
- **Privat Docent (PD)**
- University of Geneva, Geneva, Switzerland
- **January 2000**
- **Philosophy degree (PhD)**
- University of Geneva, Geneva, Switzerland
- **August 1993**
- **Magister**
- Centre de Radioprotection et de Sûreté, Alger, Algérie
- **July 1992**
- **Master of Science**
- Lund University, Malmö, Sweden
- **July 1990**
- **Bachelor of Engineering**
- University of Setif, Setif, Algeria

Additional relevant training (e.g. continuing education – 5 maximum)

- **February 2010**
- **Radiation protection officer (physician expert en radioprotection)**
- Institut Universitaire de Radiophysique Appliquée, Lausanne, Switzerland
- **Sep 2002**
- **Board certification in Medical Imaging Physics**
- Swiss Society of Radiobiology and Medical Physics (SSRMP), Bern, Switzerland

■ Past and present positions from the most recent to the oldest

- **01.10.1999 - now**
- **Chief physicist**
- Geneva University Hospital, Geneva, Switzerland
- **01.02.2022 - now**
- **Full Professor**
- University of Geneva, Medical School, Geneva, Switzerland
- **01.01.2017 – 31.01.2022**
- **Associate Professor**
- University of Geneva, Medical School, Geneva, Switzerland
- **01.04.2014 - 31.12.2016**
- **Chargé de cours**
- University of Geneva, Medical School, Geneva, Switzerland
- **01.10.2004 – 31.03.2014**
- **Privat docent**
- University of Geneva, Medical School, Geneva, Switzerland
- **03.06.2011 – now**
- **Honorary Professor**
- University of Groningen, Groningen, The Netherlands
- **01.04.2008 – 31.05.2011**
- **Honorary Associate Professor**
- University of Groningen, Groningen, The Netherlands
- **01.03.2015 – now**
- **Adjunct Professor**
- University of Southern Denmark, Odense, Denmark
- **01.03.2015 – now**
- **Adjunct Professor**
- University of Southern Denmark, Odense, Denmark
- **01.04.2019 – now**
- **Honorary Professor**
- Tehran University of Medical Sciences, Tehran, Iran
- **14.09.2016 – now**
- **Honorary Professor**
- Shahid Beheshti University, Tehran, Iran
- **01.03.2022 – 28.02.2023**
- **Distinguished Adjunct Professor**
- King Abdulaziz University, Jeddah, Saudi Arabia

- **01.10.2023 – now**
- **Distinguished Professor**
- Obuda University, Budapest, Hungary
- **2017 – 2018**
- **Visiting Professor**
- University Cergy-Pontoise, Cergy. France
- **2007 – 2010**
- **Visiting Professor**
- University Cergy-Pontoise, Cergy. France

■ Academic age

Number of years since the first scientific publication: 27

As clinical medical physicist, I oversee the medical imaging equipment (CT, SPECT/CT, PET/CT and PET/MRI) installed in the Department of Diagnostics at Geneva University Hospital. I am also radiation protection officer for the Division of Nuclear Medicine & Molecular Imaging.

■ Honors and awards

- 2023 Recipient of [2023 John Mallard Award](#) given by the International Organization for Medical Physics (IOMP) for *“for innovative developments of high quality that were successfully applied in clinical practice”*. The award was given at a ceremony held in Mumbai (India) during the International Conference on Medical Physics (ICMP 2023), 6-9 December 2023.
- 2021 Co-recipient of [Society of Nuclear Medicine and Molecular Imaging \(SNMMI\), International Best Abstract Award](#), 67th SNMMI Annual Meeting, Washington DC, USA, 12–15 June 2021
- 2021 Co-recipient of [European Congress of Radiology \(ECR 2021\) – Best Research Presentation Abstract within the topic Imaging Informatics & Artificial Intelligence](#) given by the European Society of Radiology, Vienna, Austria, 3-7 March 2021.
- 2020 [2020 Clinical Paper of the Year, Molecular Imaging & Biology](#), Shiri et al. "Next-generation radiogenomics sequencing for prediction of EGFR and KRAS mutation status in NSCLC patients using multimodal imaging and machine learning algorithms" *Mol Imaging Biol* 22(4): 1132-1148 (2020).
- 2019 Recipient of [2019 Khwarizmi International Award \(KIA\)](#) given by the Iranian Research Organization for Science and Technology (IROST) in the category Invention & Innovation *“for significant contributions to precision medicine using molecular imaging techniques”*. The award was given by his Excellency the President of the Islamic Republic of Iran at a ceremony held in Tehran on 4th March 2019.
- 2017 Recipient of [2017 IBA-Europhysics Prize](#) given by the European Physical Society (EPS) for outstanding contributions to Applied Nuclear Science and Nuclear Methods and Nuclear Researches in Medicine. The prize was awarded at the 4th European Nuclear Physics Conference, September 2-7, 2018, held in Bologna (Italy).
- 2015 Recipient of [2015 Sir Godfrey Hounsfield Award](#) given by the British Institute of Radiology. The prize was awarded at the BIR annual congress, November 4-5, 2015, held in London (UK).
- 2013 Recipient of [2013 John S. Laughlin Young Scientist Award](#) given by the *American Association of Physicists in Medicine (AAPM)* to recognize outstanding scientific achievements in medical physics for a young scientist. The prize was awarded at the 55th AAPM Annual Meeting, August 4 - 8, 2013, held in Indianapolis (IN, USA).
- 2003 Recipient of the [2003 Young Investigator Medical Imaging Science Award](#) given by the Nuclear Medical and Imaging Sciences Technical Committee (NMISTC) of the IEEE to a

young investigator in recognition of significant and innovative technical contributions to the field of medical imaging science. The prize was awarded at the IEEE Medical Imaging Conference, Portland (Oregon) 19-25 October 2003.

■ Language skills

Arabic: Mother tongue

French: Very good

English: Very good

■ Self-evaluation

I am actively involved in developing imaging solutions for cutting-edge interdisciplinary biomedical research and clinical diagnosis. In 2000, I initiated a basic research program and founded the PET Instrumentation & Neuroimaging laboratory (*PinLab*). In a relatively short time, the group has assumed a leading role in Switzerland and become internationally recognized for excellence in medical imaging research with multimodality imaging being a focus for its activities. His group gained international recognition for contributions to cutting-edge interdisciplinary biomedical research and clinical diagnosis including the development and analysis of new image correction and reconstruction techniques for improved quantification in preclinical and clinical hybrid imaging (PET/CT and PET/MRI) as well as development and better understanding of PET and x-ray CT Monte Carlo modelling tools in connection with computational modelling and radiation dosimetry. The lab has also been involved in the development of detector modules and novel designs for dedicated high-resolution PET cameras in collaboration with CERN and other research institutions. The academic accomplishments in the area of quantitative molecular imaging have been well recognized by his peers and by the medical imaging community at large since I am a recipient of many prestigious awards and distinctions. *PinLab* provides an academic environment in the hospital setting for training of highly qualified personnel in medical physics and hybrid imaging. A close relationship with medical professionals helps us to focus our research on issues that are especially relevant for medicine. A new thread of my research interests is artificial intelligence, particularly deep learning and its use in various image analysis tasks, including instrumentation developments, low-dose and reduced scanning time acquisition protocols for both PET and CT imaging, in addition to other applications, including advanced image analysis, quantitative imaging, dosimetry calculations and outcome prediction and prognostic modeling.

■ Research outputs

- **Zaidi H**, Ojha N, Morich M, Griesmer J, Hu Z, Maniawski P, Ratib O, Izquierdo D, Fayad Z, and Shao L "Design and performance evaluation of a whole-body Ingenuity TF PET–MRI system" *Phys Med Biol* Vol. 56, No. 10, pp 3091-3106 (2011).

<https://archive-ouverte.unige.ch/unige:23498>

This paper reports on the conceptual design of the Philips Ingenuity TF PET-MRI whole body hybrid PET-MR imaging system and NEMA measurements for the PET subsystem. This is the first commercial whole-body PET-MRI system worldwide. This pioneering work triggered the further development and clinical deployment of hybrid PET/MR technology.

- **Zaidi H**, M-L Montandon, DO Slosman, "Magnetic resonance imaging-guided attenuation and scatter corrections in three-dimensional brain positron emission tomography" *Med Phys* Vol. 30, No 5, pp 937-948 (2003). In *validation on Archives ouvertes*

<https://www.hug.ch/sites/interhug/files/structures/pinlab/documents/MedPhys2003.pdf>

This paper reports on the development and clinical assessment of a novel MRI-guided attenuation correction algorithm for PET/MRI. This is the first paper addressing the complex topic of MRI-guided attenuation correction in the context of brain PET imaging. This pioneering work triggered the further development and clinical implementation of MRI-guided attenuation correction on clinical hybrid PET/MRI systems.

- Mehranian A and **Zaidi H** "Joint estimation of activity and attenuation in whole-body TOF PET/MRI using constrained Gaussian mixture models" *IEEE Trans Med Imaging* Vol. 34, No. 9, pp 1808-1821 (2015).

<https://archive-ouverte.unige.ch/unige:78748>

This paper reports on the development and clinical evaluation of a novel MRI-guided maximum likelihood reconstruction of attenuation and activity algorithm for emission-based attenuation correction in whole-body PET/MR imaging. The proposed algorithm outperformed its counterparts in suppressing the cross-talk and scaling problems of activity and attenuation and thus produces PET images of improved quantitative accuracy.

- Karakatsanis N, Casey ME, Lodge MA, Rahmim A and **Zaidi H** "Whole-body direct 4D parametric PET imaging employing nested generalized Patlak expectation-maximization reconstruction" Phys Med Biol Vol. 61, No 15, pp 5456–5485 (2016).

<https://archive-ouverte.unige.ch/unige:90690>

This paper reports on the development and evaluation of a clinically adoptable 4D whole-body reconstruction framework enabling efficient estimation of standard Patlak and generalized Patlak images directly from dynamic multi-bed PET raw data with substantial noise reduction. The presented 4D PET reconstruction methods can efficiently, robustly and easily be translated to the clinic, to enhance quantification in existing routine protocols.

- Arabi H, Zeng G, Zheng G and **Zaidi H** "Novel adversarial semantic structure deep learning for MRI-guided attenuation correction in brain PET/MRI" Eur J Nucl Med Mol Imaging Vol. 46, No. 13, pp 2746-2759 (2019).

<https://archive-ouverte.unige.ch/unige:23498>

This paper reports on the development and clinical evaluation of a novel synthetic CT generation algorithm based on deep learning adversarial semantic structure (DL-AdvSS) is proposed for MRI-guided attenuation correction in brain PET/MRI. This pioneering work paved the way for acceptance of deep learning-based techniques for MRI-guided attenuation correction.

<https://archive-ouverte.unige.ch/unige:121810>

Methods, tools, infrastructures, data, etc. developed as part of research

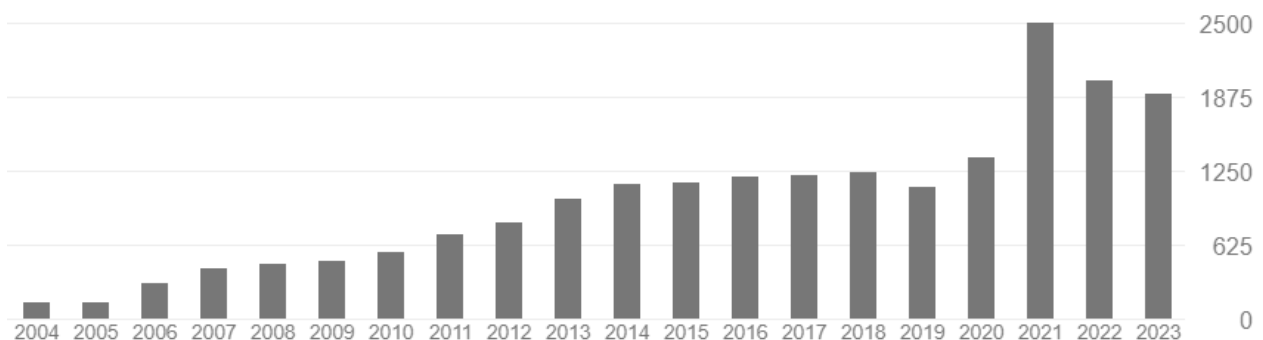
Our group made outstanding contributions in scientific and engineering biomedical research. Our contributions fall into the general area of multimodality molecular imaging methods and instrumentation and their applications in clinical diagnostic and therapy planning. The group has demonstrated a record that put us among the experts in the field on two independent grounds. First, we were one of the pioneers of using Monte Carlo modeling of medical imaging systems. Second, our work on quantitative PET imaging proved to be an important asset for extracting important parameters of clinical interest. The pioneering feasibility study of MRI-guided attenuation correction, being at present a hot topic and one of the most important developments for the future for hybrid PET/MRI technology, carried out in 2002 prior to the development of hybrid PET/MRI systems shows visionary and futuristic outlook.

We worked closely with Philips Healthcare on the optimization of the design and clinical exploitation and validation of a fully integrated system and characterization of the physical performance and mutual system interference between the PET and MRI subsystems of the Philips time-of-flight Ingenuity TF PET subsystem. A new thread of our research interests which is attracting the interest of industry is MRI-guided attenuation correction in PET/MRI using various approaches, where we made seminal contributions outperforming techniques proposed earlier. Finally, the advent of dynamic whole-body PET/CT imaging using graphical analysis utilizing multi-bed multi-pass PET acquisition thus enabling to produce parametric images of the tracer influx rate K_i , emerged as a promising approach and is considered as a major breakthrough that needs to be explored further and validated in clinical setting. This methodology was further refined using novel direct 4D nested generalized Patlak parametric reconstruction in collaboration with Johns Hopkins University and funding provided by Siemens healthcare through generalized WB Patlak parametric imaging for enhanced quantification in clinical whole-body PET/CT imaging.

Our group has also substantial expertise in the development of animal and human computational anthropomorphic models in connection with Monte Carlo-based assessment of radiation dose in x-ray CT and nuclear medicine procedures. This includes challenging models for pregnant patients and fetus at different gestation periods and associated dose calculation procedures for complex imaging protocols on current generation CT scanners and using novel molecular imaging probes. The group has extensive experience in using machine learning algorithms to implement low-dose and reduced scanning time acquisition protocols for both PET and CT imaging, in addition to other applications, including advanced image analysis, quantitative imaging, dosimetry calculations and outcome prediction and prognostic modeling.

Publication indicators specific to the discipline (h-index, total number of citations)

- Google Scholar <https://scholar.google.com/citations?user=uJkubCgAAAAJ&hl>
- ORCID: [0000-0001-7559-5297](https://orcid.org/0000-0001-7559-5297)
- h index (Google scholar) = 76
- Number of citations = 20500
- Number of peer-reviewed publications = 396
- Number of books = 5
- Number of book chapters = 42



■ Scientific planning

My goal for the next 5 years is to pursue the defined objectives for our research lab along two main research lines, namely development of innovative PET instrumentation for organ-specific imaging (e.g. prostate), algorithmic development of deep learning-assisted quantitative imaging biomarkers in clinical oncology and translation of the developed devices and methodologies and their integration in the clinic for diagnosis, monitoring of treatment response, prognostic modelling and outcome prediction.

Our research will focus on 3 main themes:

- Develop and evaluate in clinical setting high temporal and spatial resolution PET and scintillation camera instrumentation dedicated for prostate cancer imaging and lymph node detection and identification.
- Algorithmic development of novel neural network architectures and innovative solutions for deep learning-assisted quantitative imaging biomarkers in clinical oncology.

- Clinical translation of the developed instrumentation and quantitative imaging methodology in clinical oncology.

■ Research collaborations

Our research projects, mentioned below in detail in relation to the associated research funding, are based on an extensive national and international collaborative network. The five main collaborative projects in which our group is involved are listed below.

■ Research funding and grants

Total funding: 6'519'285- (n=34 | 7 SNF/PI, 3 SNF/co-PI, 5 European, 1 HUG private foundation)

2024-2030	EEC Horizon PREMIO COLLAB 101136812, subside de recherche " <i>Personalised response monitoring in oncology: Co-creating clinical trials in advanced breast cancer</i> ", 7'999'921 €, 419'875 € received.
2024	Swiss National Science Foundation, SNSF 316030_221476, " <i>Preclinical PET/CT imaging in multidisciplinary research to assess mechanistic, diagnosis and treatment of diseases</i> ", 420'000 CHF.
2022-2024	EEC ATTRACT Phase 2 « <i>Position-sensitive SiPMs compact and scalable Beta-camera</i> » POSICS-2 (total 500'000 €), co-PI, 152'000 CHF (30% received)
2021-2024	Fondation Privée des HUG « <i>A high spatial and temporal resolution PET scanner dedicated for prostate cancer imaging</i> » CONFIRM RC06-01 (total 610'000 CHF), PI, 100% received
2020-2024	EEC Horizon 2020 NFRP-2019-2020 « <i>Radiation risk appraisal for detrimental effects from medical exposure during management of patients with lymphoma or brain tumours</i> » SINFONIA NFRP-945196 (total 5'999'998 €), co-PI, 603'988 CHF (9.2% received)
2020-2024	EEC Eurostars/Eureka Horizon 2020 « <i>Organ-specific PET scanner for early diagnosis of prostate cancer</i> » E! 114021 ProVision (total 2'357'172 €), co-PI, 273'776 CHF (21.1% received)
2018-2022	Swiss National Science Foundation, SNSF, subside de recherche « <i>Towards patient-specific hybrid whole-body PET parametric imaging</i> » FNRS 320030_176052, 429'000 CHF, PI, 100% received.

■ Research supervision and mentoring

Size and composition of research group

The current size of the group is about 12, including 1 Maître-assistant, 1 post-doc, and 9 PhD students. The membership of the group commonly varies between 10 and 14 depending on the number of students and funding available. The current composition of the group is given below:

- Hossein Arabi, PhD, Maître-assistant, University of Geneva.
- Amirhossein Sanaat, Postdoc fellow, University of Geneva.
- Ghasem Hajianfar, University of Geneva (Switzerland) "*Combined deep learning and radiomics analysis in multimodality medical imaging*" (expected 2027).
- Yiyi Hu, PhD student, University of Geneva, "*Strategies for deep learning-assisted signal separation in multi-tracer PET imaging*" (expected 2027).

- Xiaotong Hong, PhD student, University of Geneva & Southern Medical University Guangzhou (China) "*Deep learning-guided quantitative analysis in PET imaging*" (expected 2025).
- Chang Sun, PhD student, University of Geneva & Beijing University of Posts and Telecommunications (China) "*Deep learning-assisted quantitative analysis in CT imaging*" (expected 2024).
- Zahra Mansouri, PhD student, University of Geneva, "*Personalized dosimetry in theranostics using deep learning*" (expected 2025).
- Mehdi Amini, PhD student, University of Geneva, "*Design considerations of a PET scanner dedicated for prostate cancer imaging and prognostic modelling in clinical oncology*" (expected 2025).
- Abdollah Saberi Manesh, PhD student, University of Geneva, "*Deep learning-assisted PET image reconstruction for a PET scanner dedicated for prostate cancer imaging*" (expected 2025).
- Yazdan Salimi, PhD student, University of Geneva, "*Deep learning-guided dosimetry calculations in hybrid imaging*" (expected 2024).
- Mustafa Arslan, PhD student, University of Geneva, "*Advanced molecular neuroimaging using deep learning*" (expected 2024).
- Amir Ghabrial, PhD student, University of Geneva & University of Technology Sydney (Australie), "*Simulation-based design of cost-effective whole-body PET scanners*", (expected 2024).

Mentoring and coaching to promote scientific offspring of less advanced investigators

I adopt a systematic approach to career planning in his role of supervisor or mentor for early-stage researchers including (but not limited to) PhD students and postdoctoral fellows and junior faculty. Active career planning seldom features in the lives of early-stage researchers: according to his experience 50% of postdoctoral researchers have no idea how their postdoctoral training will lead them into a career. Yet there is evidence that developing specific career goals makes early-stage researchers more likely to succeed, leading to more success, more frequent promotions, more responsibility and greater job satisfaction. This approach encourages researchers to take an active role in their career progression and is beneficial for those intending to pursue academic or nonacademic careers. My policy is to encourage graduate students to publish research results in peer-reviewed journals with the student's name first on the author's list. My contribution, however, to each paper is always substantial. By following the careers of young postdoctoral fellows and Ph.D. students taken on by industry and academic institutions after leaving the laboratory, we will ensure that university long tradition of transferring expertise to industry and academia through people continues to grow. A number of my students and fellows are females.

- Dr Nikolas Karakatsanis, Assistant Professor of Biomedical Engineering, Weill Cornell Medicine, Cornell University, USA, recipient of prestigious 2023 Hall O'Brien Rising Stars Award given by the Society of Nuclear Medicine and Molecular Imaging (SNMMI).
- Dr Tianwu Xie, Research Professor, Fudan University, Shanghai, China.
- Dr Abolfazl Mehranian, Senior Imaging Data Scientist at GE HeathCare, Recipient of of the 2018 Young Investigator Medical Imaging Science Award given by the Nuclear Medical and Imaging Sciences Technical Committee (NMISTC) of the IEEE.
- Dr Fotis Kotasidis, Research scientist and research collaborations manager at GE HeathCare, Illinois, USA.

- Dr Frédéric Schoenahl, Head of Enterprise Services, Siemens Healthineers Int. LTD, Switzerland.

■ Other scientific activities

Editorial activities

- Founding Editor-in-Chief (Scientific), *The British Journal of Radiology (BJR)*|Open (2019)
- Deputy Editor, *Medical Physics* (Official Journal of the AAPM) (2021-now).
- Guest Editor of 14 special issues of PET Clinics, BJR, *Physica Medica*, *Proceedings of the IEEE*, *Computer Methods and Programs in Biomedicine*, ...
- Member of the editorial board of *Clinical Nuclear Medicine*, *Journal of Nuclear Cardiology*, *Computers in Biology and Medicine*, *International Journal of Imaging Systems and Technology*, *Clinical and Translational Imaging*, *Diagnostics*, *International Journal of Biomedical Imaging*, *Brain Imaging Methods*, *American Journal of Nuclear Medicine and Molecular Imaging*, ...
- Associate Editor of *Physica Medica*, *Journal of Biomedical Engineering & Medical Imaging*, *Frontiers in Nuclear Medicine*, ...
- Reviewers for leading journals including *Radiology*, *The Journal of Nuclear Medicine*, *The European Journal of Nuclear Medicine & Molecular Imaging*, *Neuroimage*, *Physics in Medicine and Biology*, *IEEE Transactions on Medical Imaging*, *IEEE Transactions on Biomedical Engineering*, *IEEE Transactions on Image Processing*, *European Radiology*, *Academic Radiology*, *The Journal of Cerebral Blood and Metabolism*, *Radiotherapy & Oncology*, *Molecular Imaging & Biology*, ...

Reviewer for grant funding bodies

- Swiss National Science Foundation (SNF), European Commission (EEC) The Netherlands Organisation for Scientific Research (NWO), European Science Foundation, Canadian Institutes of Health Research (CIHR), Expert for evaluation of research proposals, Canadian Natural Science and Engineering Research Council (NSERC), Centre National de la Recherche Scientifique, (CNRS), French National Research Agency (ANR), National Cancer Institute of Canada (NCIC), Fonds de la santé du Québec (FRSQ), Canada Foundation for Innovation (CFI), The Wellcome Trust London, German Research Foundation (DFG), Swiss Cancer Research Foundation, Cyprus Research Promotion Foundation (RPF), Croatian Research Foundation, Research Councils UK, Human Brain Project (HBP) competition, ETH Zurich Research Grant Program, Hercules Foundation, Brussels, Institut National de la Santé et de la Recherche Médicale (INSERM), Health Research Board (HRB) Ireland, Dutch Technology Foundation (STW), Dutch Cancer Society (KWF), Austrian Science Fund (FWF), Foundation for Polish Science (FNP), Joint Programme for Neurodegenerative Disease (JPND), Central Finance and Contracting Agency (CFCA) Latvia, Sultan Qaboos University, French National Alliance for Life and Health Sciences (AVIESAN), Research Foundation – Flanders (FWO), ETH Zurich Personalized Health and Related Technologies (PHRT), King Fahd University of Petroleum and Minerals (KFUPM), Ludwig Boltzmann Gesellschaft (LBG), “la Caixa” Banking Foundation – Health Research Programme, Israel Science Foundation (ISF), Swiss Personalized Health Network (SPHN), Kuwait Foundation for the Advancement of Sciences (KFAS), French National Cancer Institute (INCa), Ministry of Education, University and Research, Directorate- General for Research Italy, The European Association of National Metrology Institutes (EURAMET), Khalifa University of Science & Technology, Research Office, The interdisciplinary AI institute 3IA Côte d’Azur, Center for AI in Medicine (CAIM), University of Bern.

Membership of professional societies

- Fellow, Institute of Electrical and Electronics Engineers (IEEE).
- Fellow, American Institute for Medical and Biological Engineering (AIMBE).
- Fellow, IEEE Engineering in Medicine and Biology Society (EMBS)
- Fellow, American Association of Physicists in Medicine (AAPM)
- Fellow, International Organization for Medical Physics (IOMP)
- Fellow, Asia-Pacific Artificial Intelligence Association (AAIA)
- Life honorary member, Association Nationale de Médecine Nucléaire Libérale (ANMNL)
- Society of Nuclear Medicine & Molecular Imaging (SNMMI)
- European Association of Nuclear Medicine (EANM)
- IEEE Nuclear and Plasma Society (NPSS)
- Swiss Society of Radiobiology and Medical Physics (SSRMP)
- IEEE Signal Processing Society (SPS)
- European Institute for Biomedical Imaging Research (EIBIR)
- International Organization for Medical Physics (IOMP)
- International Radiation Protection Association (IRPA)
- Algerian Association of Medical Physicists (AAMP)
- American Association for the Advancement of Science (AAAS)
- International Centre for Theoretical Physics (ICTP)

Organization of Conferences (selected)

- General Chair, 12th European Workshop on Visual Information Processing (EUVIP 2024), Geneva, Switzerland, 8-11 September 2024.
- Awards Chair, 11th European Workshop on Visual Information Processing (EUVIP 2023), Gjøvik, Norway, 11-14 September 2023.
- General Chair, 4th International Conference on Artificial Intelligence and Computer Science (AICS/2022), Beijing, China, 30-31 July 2022
- Track co-chair, Joint Conference of the German, Swiss and Austrian Medical Physics Societies, Virtual meeting, 19-22 September 2021.
- Director, *AAPM-MEFOMP Medical Physics Workshop in Diagnostic Imaging and Radiotherapy*, Beirut, Lebanon, 1-4 December 2018.
- Director of *AAPM International Scientific Exchange Programs (ISEP) Radiation Therapy Symposium*, Durban, South Africa, 27-30 September 2017.
- Track co-Chair (Dosimetry in Nuclear Medicine), *World Congress on Medical Physics and Biomedical Engineering (WC2012)*, Beijing, China, 26-31 May 2012.

Invited talks at International Conferences (selected)

Over 160 plenary and keynote talks at International Conferences

- European Congress of Radiology (ECR 2024), “*AI-based algorithms for dose optimization in CT*”, Vienna, Austria, 28 February - 3 March 2024.
- International Symposium on Artificial Intelligence & Informatics in Nuclear Medicine “*Deep learning-assisted CT image synthesis from MRI*”, 9-11 October 2023, Groningen, Netherlands
- 11th European Workshop on Visual Information Processing (EUVIP 2023), “*Quantitative imaging biomarkers in the era of precision medicine*”, 11-14 September 2023, Gjøvik, Norway.

- 17th International Congress for Radiation Research “*The promise of deep learning in multimodality medical imaging*”, 27-30 August 2023, Montreal, Canada
- Annual conference for the 180°N Norwegian Nuclear Medicine Consortium, “Adventures in the multimodality molecular imaging wonderland: Focus on recent innovations in deep learning” 25-27 April 2023, Bergen, Norway
- 8th International Conference of the Egyptian Society of Nuclear Medicine Specialists (ESNMS), delivered two lectures on “*The promise of artificial intelligence in multimodality medical imaging and Advances in molecular imaging instrumentation*” 25-26 February 2023, Cairo, Egypt
- 6th International Conference on Image and Graphics Processing (ICIGP 2023), “*New horizons in deep learning-assisted multimodality medical image analysis*”, January 6-8, 2023, Chongqing, China
- 4th International Conference on Medical Technologies (JITM’2022), “*The promise of artificial intelligence in multimodality medical imaging*” 17-19 November 2022, Hammamet, Tunisia
- First Regional Conference of the Federation of African Medical Physics Organizations (FAMPO), delivered two lectures on “*The promise of artificial intelligence in multimodality medical imaging and Advances in molecular imaging technology*”, 10-12 November 2022, Marrakesh, Morocco
- 8th International Conference on Human Interaction and Emerging Technologies (IHET 2022), “*The promise of artificial intelligence in multimodality medical imaging*”, Nice, France, 22-24 August 2022
- 4th European Congress of Medical Physics, “*How AI can improve radiation protection in medical imaging*”, Dublin, Ireland, 17-20 August 2022
- The third conference on intelligence and fuzzy systems conference (INFUS 2022), “*The promise of deep learning in multimodality medical image analysis*”, Izmir, Turkey, 19-21 July 2022
- European Association of Nuclear Medicine (EANM) Multidisciplinary Days, “*The emerging role of artificial intelligence in reducing radiation exposure*”, Vienna, Austria, 28 June 2022
- IUPESM World Congress on Medical Physics and Biomedical Engineering (WC’2022) “*Advances in PET/MRI instrumentation and quantitative imaging*”, 12-17 June 2022, Singapore

■ Contributions to Open Science

Early in my academic career, I have been committed to making my publications publicly available through open access journals accessible to the public through open access journals, open access articles or institutional repositories, or in the form of pre-publications made available through the lab’s web site. I also undertake to make available the research material (algorithms, particularly AI-based) and data sets. I have published a large number of open access articles.

■ Scientific outreach

NA

■ Teaching experience

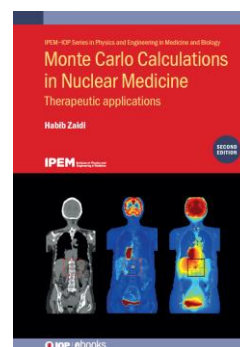
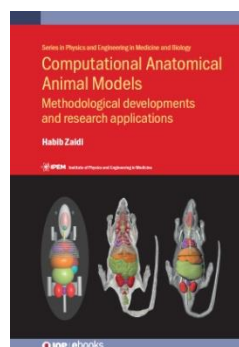
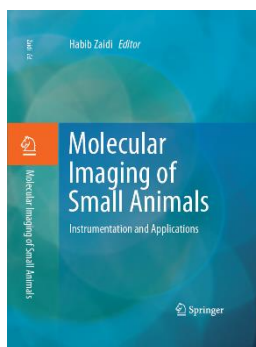
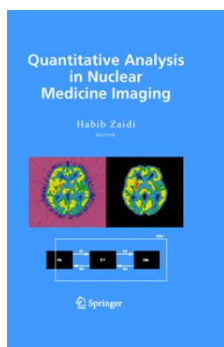
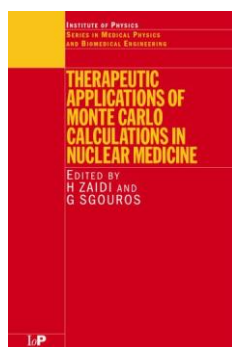
Although my views of teaching are still evolving, I am guided by a philosophical framework. It is drawn from three primary areas: my undergraduate and graduate student learning experiences; teaching experiences predominately with graduate students; and the writings of many scholars who reinforce the values of a liberal education, encourage teachers to develop instructional strategies tailored to a variety of learning styles, and champion the adoption of a "win-win" mentality between teachers and students.

- Responsible of Compétence Cliniques - Séminaire interactif CC Radiologie 3: Médecine nucléaire : Scintigraphies, PET-CT, Unité Respiration, Bachelor (2nd year), (28h/y).

■ Development of teaching tools and activities

I published 5 books and 41 book chapters used as teaching material in a number of university worldwide.

- **Zaidi H Ed.** "*Monte Carlo Calculations in Nuclear Medicine: Therapeutic Applications*" (Institute of Physics Publishing, Bristol, UK), Hardback ISBN: 9780750326926, Ebook ISBN: 9780750326940, 573p, 2nd Edition (2022).
- **Zaidi H, Ed.**, "*Computational Anatomical Animal Models: Methodological Developments and Research Applications*" (Institute of Physics Publishing, Bristol, UK), ISBN 978-0-7503-1345-2, 224p (2018).
- **Zaidi H, Ed.**, "*Multimodality Molecular Imaging of Small Animals: Instrumentation and Applications*" (Springer, New York) ISBN 978-1-4939-0893-6, 812p (2014).
- **Zaidi H, Ed.**, "*Quantitative analysis in nuclear medicine imaging*" (Springer, New York) ISBN 0 387238549, 573p (2006).
- **Zaidi H and Sgouros G, Eds.** "*Therapeutic Applications of Monte Carlo Calculations in Nuclear Medicine*" (Institute of Physics Publishing, Bristol, UK) ISBN 0 7503 8168, 363p, 1st Edition (2002).



I developed the teaching materials and the evaluation questions for one course.

- H. Zaidi « Imagerie fonctionnelle : physique et instrumentation » HUG, Ed. Pr F. Terrier (2002)
- H. Zaidi « Les bases de la scintigraphie » Support du CCDC Unité Respiration, Radiologie 4, Université de Genève.

■ Teaching perspective

Current experience indicates that teaching with digital multimedia tools at all levels (pre-graduate, post-graduate and continuing) is becoming increasingly important because they not only provide time flexibility and advantages for work-life balance, but also have a positive effect on attention, memorization and practical application of the content learned. My vision is to integrate these innovative tools into the teaching of medical imaging classes at all levels.

■ Management skills

My management experience is based on theoretical learning as well as daily management practice. I am leading the PnLab research group where the membership varies between 10 and 14 depending on the number of students and funding available and includes Master and PhD students and postdoctoral fellows and junior faculty. I oversee all current and previous research projects at *PinLab*, which enabled me to gain substantial experience in team leadership and project management.

■ Institutional involvement

Cite up 5 administrative and representation activities in the service of your institution (past or present activities).

- Head of PET Instrumentation & Neuroimaging Laboratory (PinLab)
- Member of Geneva University Neurocenter, university of Geneva
- Member of the commission on Radiation Protection, HUG
- Member of Dosimetry Archiving and Communication System (DACS COPIL) group, HUG
- Ad hoc Member of academic commissions for the promotion of faculty

Curriculum vitae

Clinical expertise

As clinical medical physicist, I oversee the medical imaging equipment (CT, SPECT/CT, PET/CT and PET/MRI) installed in the Department of Diagnostics at Geneva University Hospital. This includes performing acceptance testing and quality assurance of equipment in collaboration with the scanner manufacturers, regular software updates, and handling all technical issues pertaining to image quality and extraction of quantitative image-derived metrics from the imaging data. Optimization of data acquisition and reconstruction protocols, including the radiation dose delivered to patients is also among my activities. I am also in charge of performing dosimetry calculations for patients undergoing radiology and nuclear medicine examination procedures, including pregnant patients. In addition, I am radiation protection officer for the Division of Nuclear Medicine & Molecular Imaging, HUG.

Prof. Habib ZAIDI, FIEEE, FAIMBE, FAAPM, FIOMP, FAAIA, FBIR

Head of PINLAB

a. ARTICLES ORIGINAUX PUBLIES OU ACCEPTES DANS DES JOURNAUX A POLITIQUE EDITORIALE (5 ANS)

2023

1. Jahangir R, Kamali-Asl A, Arabi H, and **Zaidi H** "Strategies for deep learning-based attenuation and scatter correction of brain ^{18}F -FDG PET images in the image domain" Med Phys (2023) *in press*
2. Asadi A, Akhavanallaf A, Hossein SA, Vosoughi N and **Zaidi H** "Development and validation of an optimal GATE model for proton pencil-beam scanning delivery" Z Med Phys (2023) *in press*
3. Hajianfar G, Sabouri M, Salimi Y, Amini M, Bagheri S, Jenabi E, Hekmat S, Maghsudi M, Mansouri Z, Khateri M, Jamshidi MH, Jafari E, Rajabi AB, Asadi M, Oveisi M, Shiri I and **Zaidi H** "Artificial intelligence-based analysis of whole-body bone scintigraphy: The quest for the optimal deep learning algorithm and comparison with human observer performance" Z Med Phys (2023) *in press*
4. Shiri I, Amini M, Yousefirizi F, Vafaei Sadr A, Hajianfar G, Salimi Y, Mansouri Z, Jenabi E, Maghsoudi M, Mainta I, Becker M, Rahmim A and **Zaidi H** "Information fusion for fully automated segmentation of head & neck tumors from PET and CT images" Med Phys (2023) *in press*
5. Mecheter I, Abbod M, **Zaidi H** and Amira A "Transfer learning from T1-weighted to T2-weighted MR sequences for brain image segmentation" CAAI Trans Intell Technol (2023) *in press*
6. Whybra P, Zwanenburg A, Andrearczyk V, Schaer R, Apte A, Ayotte A, Baheti B, Bakas S, Bettinelli A, Boellaard R, Boldrini L, Buvat I, Cook GJR, Dietsche F, Dinapoli N, Goh V, Guckenberger M, Hatt M, Hosseinzadeh M, Iyer A, Jaouen V, Lenkiewicz J, Loutfi MAL, Löck S, Marturano F, Morin O, Nioche C, Orlhac F, Pati S, Rahmim A, Rezaei SM, Rookyard C, Salmanpour MR, Schindele A, Shiri I, Spezi E, Tanadini-Lang S, Tixier F, Upadhaya T, Valentini V, van Griethuysen J, Yousefirizi F, **Zaidi H**, Muller H, Vallières M, and Depeursinge A, "The Image Biomarker Standardization Initiative: Standardized convolutional filters for quantitative radiomics" Radiology (2023) *in press*
7. Xin L, Zhuo W, Liu Q, Xie T and **Zaidi H** "Triple-source saddle-curve cone-beam photon counting CT image reconstruction: A simulation study" Z Med Phys (2023) *in press*
8. Ahmadyar Y, Kamali-Asl A, Arabi H, Samimi R and **Zaidi H** "Hierarchical approach for pulmonary-nodule identification from CT images using YOLO model and a 3D neural network classifier" Radiol Phys Technol (2023) *in press*
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