

CURRICULUM VITAE AND BIBLIOGRAPHY

September 15, 2020

NAME: Patricia Svolos

PRESENT TITLE: Assistant Professor of Medical Physics, Diagnostic and Interventional Imaging.

WORK ADDRESS: UT Health, McGovern Medical School
Department of Diagnostic & Interventional Imaging
6431 Fannin St., MSB 2.130B
Houston, TX 77030

CITIZENSHIP: U.S. Citizen

UNDERGRADUATE EDUCATION:

- University of Patras (Greece), B.S. in Physics (2006).

GRADUATE EDUCATION:

- University of Patras (Greece), M.Sc. in Medical Physics (2008).
- University of Thessaly (Greece), Ph.D. in Medical Physics (2013).

POSTGRADUATE TRAINING:

- Research Fellow, St. Jude Children's Research Hospital (2016).
- Imaging Physics Residency, Henry Ford Hospital (2018).

ACADEMIC & ADMINISTRATIVE APPOINTMENTS:

- Research Fellow, Department of Diagnostic Imaging, St. Jude Children's Research Hospital (2015-2016).
- Assistant Professor – Department of Diagnostic and Interventional Imaging, The University of Texas McGovern Medical School. (2018-present).

HOSPITAL APPOINTMENTS:

- Imaging Physics Resident, Henry Ford Hospital (2016-2018).
- Medical Physicist, Memorial Hermann Hospital (2018-present).
- Medical Physicist, Lyndon B. Johnson General Hospital (2018-present).
- Radiation Safety Officer, UT Medical Physics Group, X-ray registration (2019-present).
- Radiation Safety Officer, Lyndon B. Johnson General Hospital, X-ray registration (2020).

CERTIFICATION:

- American Board of Radiology (ABR), Diagnostic Medical Physics (2019).
- Board certified Medical Physicist (Ministry of Health, Athens, Greece) (2009).
- Board certified Medical Physicist (Non-Ionizing Radiation applications) (Ministry of Health, Athens, Greece) (2008).

LICENSURE:

- Texas (FMP02000128), Diagnostic Medical Physics (2019-present).
- Texas (TMP02000218), Medical Nuclear Physics (2018 - present).

PROFESSIONAL ORGANIZATIONS (AND COMMITTEES OF THESE):

REGIONAL: - Southwest Chapter of the American Association of Physicists in Medicine
- Texas Radiological Society.

NATIONAL: - American Association of Physicists in Medicine (AAPM).
- Radiological Society of North America (RSNA).
- American College of Radiology (ACR).
- International Society for Magnetic Resonance in Medicine (ISMRM).

HONORS AND AWARDS:

1. **Brainlab Community Neurosurgery Award.** Fountas K.N, Kapsalaki E, Tsougos I., **Svolos P**, Siasios I, T. Giannis, Vagkopoulos K, Tasiou A, Gatos H, Kasselouri I, Fezoulidis I., Preoperative DTI, Intraoperative Visual Evoked Potentials, and Direct Cortical/Subcortical Stimulation for Visual Pathway Identification. AANS annual meeting, Washington, DC, USA, May 2015.
2. **Dean's Teaching Excellence Award (2018-2019)**, McGovern Medical School, University of Texas Houston.

EDITORIAL POSITIONS:

- BioMed Research International (Reviewer).

SERVICE ON UTHSC AT HOUSTON COMMITTEES:

- Radiation Safety Committee (2018-present).

SERVICE ON UT MCGOVERN MEDICAL SCHOOL COMMITTEE:

- Medical Physics Residency Steering Committee (2019-present).

SERVICE ON UTMSH AFFILIATED HOSPITAL COMMITTEES:

- Radiation Safety Committee, Lyndon B. Johnson General Hospital (2018-present).
- Performance Improvement Committee, Lyndon B. Johnson General Hospital (2018-present).
- Radiation Protocol Sub-Committee for CT systems and FGI procedures, Lyndon B. Johnson General Hospital (2018-present).

CURRENT CLINICAL SERVICE RESPONSIBILITIES:

- Perform State and ACR required equipment testing in Radiography, Dental, Fluoroscopy, Mammography, Computer Tomography and MRI.
- Provide QC training on various imaging modalities for clinical staff.
- Radiation Safety for patients (dose monitoring, dose calculations in various imaging modalities, fetal dose calculations).
- Radiation Safety for clinical personnel (dose monitoring, hands-on safety training in fluoroscopic imaging and other imaging modalities, pregnant employee radiation safety consultation).
- Radiation shielding design and verification.
- Iodine - 131 thyroid treatment patient consultation.
- Y-90 therapy.

CURRENT TEACHING RESPONSIBILITIES:

- University of Texas-Houston Health Science Center, Medical Physics Residency Program – multiple rotations (2019 – present).
- University of Texas-Houston Health Science Center, Radiology Residency Program – Fundamental Physics (2018 – present).
- University of Texas-Houston Health Science Center, Radiology Residency Program – Noon Conference (2018 – present).

MENTORING ACTIVITIES:

Medical Physics Residency:

- **Ashley Rubinstein** (2018-2020)
Rubinstein A, Ahmad M, Feng J, Codina R, Svolos P.: An evaluation of automated quality assurance and physics testing of mobile CT units. AAPM 61st Annual Meeting, San Antonio, Texas, July 14-19, 2019.
- **Olaolu Osunbayo** (2019-present).
- **Samuel Umbaugh** (July 2020-present)

PUBLICATIONS:

A. Refereed Original Articles in Journals

1. **Svolou P**, Tsougos I, Kyrgias G, Kappas C, Theodorou K.: On the use of published radiobiological parameters and the evaluation of NTCP models regarding lung pneumonitis in clinical breast radiotherapy. *Australas Phys Eng Sci Med*, 34(1): 69-81, 2011.
2. Kapsalaki E, **Svolos P**, Tsougos I, Theodorou K, Fezoulidis I, Fountas K.: Quantification of normal CSF flow through the aqueduct using PC-Cine MRI at 3T. *Acta Neurochirurgica Supplement*, 113: 39 – 42, 2012.
3. Tsougos I*, **Svolos P***, Kousi E, Fountas K, Theodorou K, Fezoulidis I, Kapsalaki E.: Differentiation of glioblastoma multiforme from metastatic brain tumor using proton magnetic resonance spectroscopy, diffusion and perfusion metrics at 3T. *Cancer Imaging*, 12: 423-436, 2012 (*joint authors).
4. Tsolaki E*, **Svolos P***, Kousi E, Kapsalaki E, Founta K, Theodorou K, Tsougos I.: Automated differentiation of glioblastomas from intracranial metastases using 3T MR spectroscopic and perfusion data. *Int J Comput Assist Radiol Surg*, 8(5): 751-761, 2013 (*joint authors).
5. **Svolos P**, Tsolaki E, Theodorou K, Fountas K, Kapsalaki E, Fezoulidis I, Tsougos I.: Classification methods for the differentiation of atypical meningiomas using diffusion and perfusion techniques at 3T MRI. *Clinical Imaging*, 37(5): 856-864, 2013.
6. **Svolos P**, Tsolaki E, Kapsalaki E, Theodorou K, Fountas K, Fezoulidis I, Tsougos I.: Investigating brain tumor differentiation with diffusion and perfusion metrics at 3T MRI using pattern recognition techniques. *Magnetic Resonance Imaging*, 31(9): 1567-1577, 2013.
7. Tsougos I, **Svolos P**, Kousi E, Athanassiou E, Theodorou K, Arvanitis D, Fezoulidis I, Vassiou K.: The contribution of Diffusion Tensor Imaging and Magnetic Resonance Spectroscopy for the differentiation of breast lesions at 3T. *Acta Radiologica*, 55(1): 14-23, 2014.
8. Lavdas E, Tsougos I, Kogia S, Gratsias G, **Svolos P**, Roka V, Fezoulidis I, Kapsalaki E.: T2 FLAIR artifacts at 3-T brain Magnetic Resonance Imaging. *Clinical Imaging*, 38(2): 85-90, 2014.
9. Tsolaki E, Kousi E, **Svolos P**, Kapsalaki E, Theodorou K, Kappas C, Fezoulidis I, Tsougos I.: Clinical decision support systems for brain tumor characterization using advanced magnetic resonance imaging techniques. *World Jour Radiol*, 6(4): 72-81, 2014. Review
10. **Svolos P**, Kousi E, Kapsalaki E, Theodorou K, Fezoulidis I, Kappas C, Tsougos I.: The role of diffusion and perfusion weighted imaging in the differential diagnosis of cerebral tumors: A review and future perspectives. *Cancer Imaging*, 14:20, 2014.
11. Tsolaki E, **Svolos P**, Kousi E, Kapsalaki E, Fezoulidis I, Theodorou K, Kappas C, Tsougos I.: Fast Spectroscopic Multiple Analysis (FA.S.M.A) - A clinical decision support system based on machine learning methods utilizing multiparametric 3T MR data. *Int J Comput Assist Radiol Surg*, 10(7): 1149-1166, 2015
12. Tsitsia V, **Svolou P**, Kapsalaki E, Theodorou K, Vassiou K, Valotassiou V, Georgoulis P, Fezoulidis I, Tsougos I.: Multimodality - multiparametric brain tumor evaluation. *Hell J Nucl Med*, 20(1): 57-61, 2017.

13. **Svolos P**, Reddick WE, Edwards A, Sykes A, Li Y, Glass JO, Patay Z.: Measurable Supratentorial White Matter Volume Changes in Patients with Diffuse Intrinsic Pontine Glioma Treated with an Anti-Vascular Endothelial Growth Factor Agent, Steroids, and Radiation. *AJNR Am J Neuroradiol*, 38(6): 1235-1241, 2017.

B. Book Chapters

1. Tsivaka D, **Svolos P**, Kapsalaki E and Tsougos I., The role of Diffusion Weighted and Diffusion Tensor Imaging in Epilepsy. *Epilepsy Surgery and Intrinsic Brain Tumor Surgery: A Practical Atlas*, Fountas K. and Kapsalaki E. (eds). Springer International Publishing, 2019.

C. Other Professional Communications

National Presentations

1. Kapsalaki E, Balatsouka A, **Svolos P**, Tsougos I, Fezoulidis I, Paterakis K, Fountas K.: The role of Diffusion Tensor Imaging in the evaluation of cervical myelopathy. ASNR 49th Annual Meeting & the Foundation of the ASNR Symposium 2011, Seattle, June 2011, Washington, U.S.A. (Oral)
2. **Svolos P.**, Vanderhoek M., Harkness B.: Physics Case of the Day. RSNA 104th Annual Meeting, Chicago, Illinois, November 25, 2018.
3. Rubinstein A, Ahmad M, Feng J, Codina R, **Svolos P.**: An evaluation of automated quality assurance and physics testing of mobile CT units. AAPM 61st Annual Meeting, San Antonio, Texas, July 14-19, 2019 (Poster).

International Presentations

1. **Svolou P**, Tsougos I, Theodorou K, Kappas C.: The use of radiobiological parameters and the evaluation of the NTCP models. How do they affect the ability to estimate radiation induced complications?. World Congress of Medical Physics and Biomedical Engineering, Munich, September 2009, Germany. (Oral)
2. Kapsalaki E, Tsougos I, **Svolou P**, Dardiotis E, Hadjigeorgiou G, Fezoulidis I, Fountas K.: Normal CSF flow measurements at the aqueduct performed at 3T. XIX Symposium Neuroradiologicum, Bologna, October 2010, Italy. (Poster)
3. Kapsalaki E, Giannis T, **Svolos P**, Tsougos I, Paschalis A, Fountas K.: Imaging of fiber tracts with high resolution MRI and 3D fiber tracking reconstruction. 5th International Symposium of Microneurosurgical Anatomy, Instabul, November 2010, Turkey. (Poster)
4. Kapsalaki E, Fillipidis A, **Svolos P**, Tsougos I, Fountas K.: The role of Diffusion Tensor Imaging (DTI) as a non-invasive tool in the diagnosis of patient with normal pressure hydrocephalus. Hydrocephalus, ISHCSF, Copenhagen, September 2011, Denmark. (Poster)
5. **Svolos P**, Kapsalaki E, Tsougos I, Fountas K.: Fractional anisotropy cingulum changes in patients with mesial temporal sclerosis. EANS, 14th European Congress of Neurosurgery, Rome, October 2011, Italy. (Poster)
6. Voutsinas E, Papaliagka M, **Svolos P**, Tsougos I, Mouzas O, Kapsalaki E.: The contribution of Diffusion Tensor Imaging in schizophrenia. 20th University Congress of Radiology, Medical School, University of Thessaly, Larissa, November 2011, Thessaly, Greece. (Oral)
7. Kousi E, **Svolos P**, Tsougos I, Theodorou K, Fountas K, Kapsalaki E.: Differentiation of glioblastoma multiforme from solitary metastasis using molecular imaging (1H-MRS), diffusion imaging (DWI, DTI) and perfusion imaging (PWI) in 3 Tesla. 20th University Congress of Radiology, Faculty of Medicine, University of Thessaly, Larissa, November

2011, Thessaly, Greece. (Oral)

8. Tsolaki E, Kousi E, **Svolos P**, Kapsalaki E, Theodorou K, Tsougos I.: Design of an artificial intelligence system as a supportive clinical tool in the differential diagnosis of cerebral lesions, using advanced MR imaging techniques in 3 Tesla. 20th University Congress of Radiology, Faculty of Medicine, University of Thessaly, Larissa, November 2011, Thessaly, Greece. (Oral)
9. Tsolaki E, Kousi E, **Svolos P**, Kapsalaki E, Theodorou K, Fountas K, Kappas C, Tsougos I.: Clinical decision support system for brain tumour diagnosis, using diffusion, perfusion and spectroscopic metrics in 3T. 4th Panhellenic Conference on Biomedical Engineering, National Technical University, Athens, January 2012, Greece. (Poster)
10. **Svolos P**, Tsolaki E, Kousi E, Kapsalaki E, Theodorou K, Fountas K, Fezoulidis I, Tsougos I.: The contribution of SVM classification in tumour differentiation using advanced 3T MRI techniques. 5th Panhellenic Conference on Biomedical Engineering, Athens, April 2013, Greece. (Poster)

Patricia Svolos, Ph.D.

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