

CURRICULUM VITAE 5/2021

Name: Marc R. Bussière

Office Address: Massachusetts General Hospital, Department of Radiation Oncology, Boston, MA 02114

Place of Birth: Ottawa, ON, Canada

Citizenships & Languages: US / Canada English / French

Education: 1992 M.Sc. (Physics/Medical Physics) McGill University, Montreal, PQ, Canada
1989 B.Sc. Honours (Physics) University of Ottawa, Ottawa, ON, Canada

Licensure and Certification: 1998 American Board of Radiology: Therapeutic Radiological Physics

Academic Appointments: 1993 - present Research Associate Harvard Medical School
1993 Adjunct Assistant Professor Mass. College of Pharmacy & Allied Health Sciences
1989 - 1991 Teaching Assistant McGill University

Hospital Appointments: 1993 - present Assistant in Radiation Biophysics Massachusetts General Hospital
1991 - 1993 Junior Physicist JCRT – Harvard Medical School
1990 - 1991 Assistant Radiation Health Physicist Montreal Royal Victoria Hospital

Professional Societies: 1991 American Association of Physicists in Medicine member
1998 American Society of Therapeutic Radiology & Oncology member
1998 American College of Radiology member

Awards and Honors: 2021 Mass General Brigham Pillars of Excellence Award
2020 MGH Cancer Center Every Day Amazing Health Professional
2012 MGH Cancer Center 100 Award
2006 Partners in Excellence Award, Partners Healthcare
1990 Canadian National Science and Engineering Research Council Postgraduate Scholarship
1989 Canadian National Science and Engineering Research Council Postgraduate Scholarship
1988 Canadian National Science and Engineering Research Council Undergraduate Research Scholarship

Research, Teaching, and Clinical Contributions:

- Director of Stereotactic Physics – Technical program oversight and management of all aspects of intra-cranial & spine Linac and Proton SRS/SRT
 - Lead physicist for CNS clinical and research developments & physics chair for CNS collaborative group
 - Commissioning/Testing/Operating of Elekta Synergy S & Agility, XVI w/ Hexapod, Varian IX & True Beam
 - Commissioning/Testing/Using of multi-modality treatment planning systems for general therapy and stereotaxi
 - Interpret and implement CPT billing practices for technical & professional charges related to radiation therapy
 - Provide shared general oversight of all aspects of proton therapy equipment and procedures (passive and spot scanning delivery)
 - Participation in various QC improvement committees with emphasis on Policies and Procedures
 - Plan review for all modalities: protons passive scattering, IMPT and SFO, conventional 3D x-rays, IMRT, electrons, DCA, VMAT, cone arcs...
 - Patient immobilization R&D and collaborations with various commercial vendors
 - Designing & implementing equipment and techniques for gantry based proton and Linac radiosurgery & radiotherapy
 - Project Manager: design, construction, commissioning and implementation of a dedicated proton SRS/SRT beam line
 - Involvement in commissioning, QA/QC for all aspects of the cyclotron based treatment system at the NPTC/FHBPTC
 - Treatment planning for proton / x-ray stereotactic radiotherapy and radiosurgery & ocular lesions
 - Image registration using MRI, CT, PET and angiography for treatment planning
 - Verification of treatment planning computer outputs including field specific calibrations
 - Clinical physics consultation for x-ray simulations, CT, MRI, angiography, proton & x-ray teletherapy treatments
 - Verification of patient set-ups throughout course of proton and x-ray treatments including chart review
 - Participation in departmental chart rounds and conferences, multi-disciplinary and collaborative group meetings
 - Evaluating, integrating and testing a commercial mMLC for intensity modulated proton therapy (IMPT)
 - Design and content writer for specialized patient information brochures and FHBPTC/MGH website
 - Development and implementation of 3D treatment planning systems (x-rays, protons)
 - Instructor for Harvard Medical School Radiation Oncology Residents and Fellows, post-docs and RTT students
 - Involvement in various clinical research projects
 - QA and QC of linear accelerators (4-15 MV x-rays, 6-16 MeV electrons)
 - Primary physicist for all aspects of proton stereotactic radiosurgery at the Harvard Cyclotron Laboratory (HCL '93-'02)
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- American College of Radiology (ACR) Radiation Oncology Practice Accreditation (ROPA) Surveyor
 - American Society for Radiation Oncology (ASTRO) Code Utilization and Application Committee (CUAC) member
 - Technical Advisor for Research and Development and Legal Medical Physics Consultation Services

PEER REVIEWED PUBLICATIONS

Koetsier K, Bussiere MR, Shih HA, **Outcome and Toxicity of Proton Therapy for Vestibular Schwannoma: A Cohort Study**; Otolaryngology and Neurotology, submitted December 2020.

Dutz A, Lühr A, Agolli L, Bütof R, Valentini C, Troost EGC, Baumann M, Vermeren X, Geismar D, Lamba N, Lebow EF, Bussière MM, Daly JE, **Bussière MR**, Krause M, Timmermann B, Shih HA, Löck S, **Modelling of Late Side-Effects Following Cranial Proton Beam Therapy**; Radiotherapy and Oncology, RADONC-D-20-01219R1 In Press 2021-01.

Winter SF, Vaios EJ, Muzikansky A, Martinez-Lage M, **Bussière MR**, Shih HA, Loeffler JS, Karschnia P, Loebel F, Vajkoczy P, Dietrich J, **Defining Treatment-Related Adverse Effects in Patients with Glioma: Distinctive Features of Pseudoprogression and Treatment-Induced Necrosis**. The Oncologist, 06/2020.

Sud S, Botticello T, Niemierko A, Daly J, **Bussiere M**, Shih H, **Dosimetric Comparison of Protons versus Photons for Treatment of Pituitary Adenoma**, submitted to Practical Radiation Oncology (PRO), 3/2020

Agarwalla PK, Koch MJ, Royce T, Redjal N, **Bussière MR**, Loeffler JS, Swearingen B, **Stereotactic Radiation as Salvage Therapy for Recurrent Rathke Cleft Cysts**, Neurosurgery, nyz523, <https://doi.org/10.1093/neuros/nyz523>, 01/2020.

Kang KH, Lebow ES, Niemierko A, **Bussière MR**, Dewyer NA, Daly J, McKenna MJ, Lee DJ, Loeffler JS, Busse PM, Shih HA, **Proton Therapy for Head and Neck Paragangliomas: A Single Institution Experience**, Head & Neck, <https://doi.org/10.1002/hed.26044>, 12/2019.

Kamran SC, Dworkin M, Niemierki A, **Bussiere MR**, Oh K, Loeffler JS, Shih HA, **Patterns of Failure Among Low-Grade Glioma Patients Treated with Proton Radiotherapy**, Practical Radiation Oncology, Vol. 9(4) 2019.

Lambda N, **Bussiere MR**, Niemierki A, Shih HA, **Hypopituitarism following Cranial Irradiation for Meningiomas: A Single-Institution Experience**, Practical Radiation Oncology, Vol. 9(3), 2019.

Kang KH, Schapira E, Niemierko A, Alvarez MM-L, **Bussière MR**, Yock TI, Loeffler JS, Butler WE, Carter BS, **The Role of Proton Beam Therapy in Central Neurocytoma: A Single-Institution Experience**, Practical Radiation Oncology, 8 (5), September 2018.

Atkins KM, Pashtan IM, **Bussiere MR**, Kang K, Niemierki A, Hurd M, Daly J, Chapman PH, Oh K, Loeffler JS, Shih HA, **Proton Stereotactic Radiosurgery for Brain Metastases: A Single Institution Analysis of 370 Patients**, Int. J. Radiat. Oncol. Biol. Phys. 101 (4) pp. 820-820, July 2018.

Dutz A, Lühr A, Agolli L, Troost EGC, Krause M, Baumann M, Vermeren X, Geismar D, Schapira EF, Bussière MM, Daly JE, **Bussière MR**, Timmermann B, Shih HA, Löck S, **Development and Validation of NTCP Models for Acute Side-Effects Resulting from Proton Beam Therapy of Brain Tumours**; Radiotherapy and Oncology, 138 (3), July 2018.

Maquilan G, **Bussiere MR**, McCormack J, Medich T, Niemierko A, Shih HA, **Radiation Safety for Pregnant Workers at a Proton Facility**, Int. J. Radiat. Oncol. Biol. Phys., Scientific Letter, pp. 1-5, November 2017.

Hwang KL, Hwang WL, **Bussière MR**, Shih HA, **The Role of Radiotherapy in the Management of High-Grade Meningiomas**, Chin Clin Oncol 2017;6

Geng C, Daartz J, Lam K, **Bussiere M**, Shih H, Paganetti H, Shuemann J, **Limitations of Analytical Dose Calculations for Small Field Proton Radiosurgery**, Phys Med Biol, 62 (1), 246-257, January 2017.

Mailhot Vega R, Ishaq O, Raldow A, Perez C, Jimenez R, Scherrer-Crosbiw M, **Bussiere M**, Taghian A, Sher D and MacDonald SM, **Establishing Cost-Effectiveness Allocation of Proton Therapy for Breast Irradiation**, Int. J. Radiat. Oncol. Biol. Phys. 95:1 (2016)

Wouters BG, Skarsgard LD, Gerweck LE, Carabe-Fernandez A, Wong M, Durand RE, Nielson D, **Bussiere M**, Wagner M, Biggs P, Paganetti H, Suit HD: **Radiobiological Intercomparison of the 160 MeV and 230 MeV Proton Therapy Beams at the Harvard Cyclotron Laboratory and at Massachusetts General Hospital**, Radiation Research 183(2): 174-187, 2015

Unkelbach J, **Bussiere MR**, Chapman PH, Loeffler JL, Shih HA, **Spatiotemporal Fractionation Schemes for Irradiating Large Cerebral Arteriovenous Malformations**, Int. J. Radiat. Oncol. Biol. Phys. 95:3: 1067-74, February 2016.

Mailhot Vega R, Kim J, Hollander A, Hattangadi J, Michalski J, Tarbell NJ, Yock TI, **Bussiere M** and MacDonald SM, **Cost-Effectiveness of Proton versus Photon Radiation Therapy with Respect to Risk of Growth Hormone Deficiency in Children**, Cancer 121(10), January 2015.

Wattson DA, Tanguturi SK, Spiegel DY, Niemierko A, **Bussière MR**, Biller BMK, Nachtigall LB, Swearingen B, Chapman PH, Loeffler JS, Shih HS: **Outcomes of Proton Radiotherapy for Patients with Functional Pituitary Adenomas**, Int. J. Radiat. Oncol. Biol. Phys. 90:3, 2014

Hattangadi-Gluth JA, Chapman PH, Kim D, **Bussière MR**, Niemierko A, Rowell A, Daartz J, Loeffler JS, Shih HS: **Single-fraction Proton Beam Stereotactic Radiosurgery for Inoperable Cerebral Arteriovenous Malformations**, Int. J. Radiat. Oncol. Biol. Phys., 89:2, 2014

Winey B, **Bussière MR**: **Geometric and Dosimetric Uncertainties in Intra-Cranial Stereotactic Treatments for Multiple Non-Isocentric Lesions**, JACMP, 15-3, 2014

Winey B, Daartz J, Dankers F, **Bussière M**, **Immobilization Precision of a Modified GTC Frame**, J. Appl Med Phys. 13:3, 2012

Hattangadi JA, Chapman PH, Bussière MR, Niemierko A, Ogilvy CS, Roswell A, Daartz J, Loeffler JS, Shih HA, **Planned Two-Fraction Proton Beam Stereotactic Radiosurgery for High-Risk Inoperable Cerebral Arteriovenous Malformations**, *Int. J. Radiat. Oncol. Biol. Phys.* 83:2, 2012

Mailhot Vega R, Kim J, Bussière M, Hattangadi J, Hollander A, Michalski J, Tarbell N, Yock T, MacDonald S; **Cost-Effectiveness of Proton Therapy Compared to Photon Therapy in the Management of Pediatric Medulloblastoma**. *Cancer* 119 (24) 4299-307, 2013

Daartz J, Winey B, Bussière M, Gierga D, Crawford B, Sedlacek D, Cotter C, **Evaluation of the ArcCheck Device for Patient-Specific Quality Assurance in Step-and-Shoot IMRT for Single-Fraction Spinal SBRT**, *Med. Phys.* 40:7, 2013

Winkfield KM, Shih HA, Niemierko A, Bussière MR, Crowley EM, Napolitano BN, Beaudette KP, Loeffler JS, Shih HA, **Modeling Intracranial Second Tumor Risk and Estimates of Clinical Toxicity with Various Radiation Therapy Techniques for Patients with Pituitary Adenoma**, *Technology in Cancer Research and Treatment*: 10:2, 243-51 (2011)

Winey B, Sharp GC, Bussière MR, **A Fast Subpixel Resolution Double Gaussian Winston Lutz Algorithm**, *Med. Phys.* 38:1 (2011)

Halasz LM, Bussière MR, Dennis E, Niemierko A, Chapman PH, Loeffler JS, Shih HA, **Proton Stereotactic Radiosurgery for the Treatment of Benign Meningiomas**, *Int. J. Radiation Oncology Biol. Phys.*, Vol.- , No.- , pp. 1-8, 2010

Arvold ND, Lessell S, Bussière M, Beaudette K, Rizzo JF, Loeffler JS, Shih HA: **Visual Outcome and Tumor Control After Conformal Radiotherapy for Patients with Optic Nerve Sheath Meningioma**, *Int. J. Radiat. Oncol. Biol. Phys.* 75(4) 1166-72, 2009

Noda S, Lautenschlaeger T, Siedow MR, Patel DR, El-Jawahri A, Loeffler JS, Bussière MR, Chakravarti A: **Technological Advances in Radiation Oncology for Central Nervous System Tumors**, *Sem. Radiation Oncology*. 19(3), 179-86, 2009

Seco J, Seethamraju R, Bussière M, Kooy H, Sharp GC, Harisnghi: **The Application of MRI Pulse Sequences for In-Vivo Verification of the Proton Beam Therapy**, *Med. Phys.* 36: Daartz J, Engelsman M, Bangert M, Bussière MR: **Field Size Dependence of the Output Factor in Proton Therapy**, *Med. Phys.* 36:7, 2009

Daartz J, Engelsman M, Bangert M, Bussière MR: **Field Size Dependence of the Output Factor in Proton Therapy**, *Med. Phys.* 36:7, 2009

Engelsman M, Lu HM, Herrup D, Bussière M, Kooy H: **Commissioning a Passive-Scattering Proton Therapy Nozzle for Accurate SOBP Delivery**, *Med. Phys.* 36:6, 2009

Petit JH, Biller BM, Yock TI, Swearingen B, Coen JJ, Chapman P, Ancukiewicz M, Bussière MR, Klibanski A, Loeffler JS: **Proton Stereotactic Radiotherapy for Persistent ACTH-Producing Adenomas**. *J. Clinical Endocrinology and Metabolism*, 93(2): 393-399 (2008)

Petit JH, Biller BM, Coen JJ, Swearingen B, Ancukiewicz M, Bussière MR, Chapman P, Klibanski A, Loeffler JS: **Proton Stereotactic Radiosurgery in Management of Persistent Acromegaly**. *Endocrinology Practice*, 13(7): 726-734 (2007)

Weber DC, Chang AW, Lessell S, McIntyre JF, Goldberga SI, Bussière MR, Fitzek MM, Thornton AF, DeLaney TF: **Visual Outcome of Primary and Adjuvant Hyperfractionated/Accelerated Radiation Therapy of Advanced Nasal Cavity and Paranasal Sinus Cancer Employing Combined Photon/Proton Irradiation**, *Journal of Cancer* (2007)

Weber DC, Chang AW, Lessell S, McIntyre JF, Goldberga SI, Bussière MR, Fitzek MM, Thornton AF, DeLaney TF: **Visual Outcome of Accelerated Fractionated Radiation for Advanced Sinonasal Malignancies Employing Photons/Protons**, *Radiotherapy & Oncology* 81(3), 243-49 (2006)

Rabinov, JD, Cheng LL, Lee PL, Brisman JL, Loeffler JS, Cole AJ, Cosgrove GR, Bussière MR, Chaves T, Gonzalez RG: **MR Spectroscopic Changes in the Rat Hippocampus Following Proton Radiosurgery**, *Stereotactic & Functional Neurosurgery* 84 (4): 147-154 (2006)

Rabinov JD, Brisman JL, Cole AJ, Lee PL, Bussière MR, Chapman PH, Loeffler JS, Cosgrove GR, Chaves T, Gonzalez RG: **MRI Changes in the Rat Hippocampus following Proton Radiosurgery**. *Stereotactic & Functional Neurosurgery* 82 (4): 156-64 (2004)

Brisman JL, Cole AJ, Cosgrove GR, Thornton AF, Rabinov J, Bussière M, Bradley-Moore M, Hedley-Whyte TE, Chapman PH: **Radiosurgery of the Rat Hippocampus: Magnetic Resonance Imaging, Neurophysiological, Histological, and Behavioral Studies**, *Neurosurgery* 53 (4): 951-61 (2003)

Weber DC, Chan AW, Bussière MR, Harsh GR, Ancukiewicz M, Barker FG, Thornton AF, Martuza RL, Nadol JB, Chapman PH, Loeffler JS: **Proton Beam Radiosurgery for Vestibular Schwannoma: Tumor Control and Cranial Nerve Toxicity**, *Neurosurgery* 53 (3): 577-86 (2003)

Bussière MR, Adams JA: **Treatment Planning for Conformal Proton Radiation Therapy**, *Technology in Cancer Research and Treatment* 2: (5) 389-99 (2003)

Weber DC, McIntyre JF, Lessell S, Goldberg S, Bussière MR, Thornton AF: **Acute Ocular Toxicity and Long-Term Visual Outcome of Primary and Adjuvant Hyperfractionated/Accelerated Radiation Therapy of Advanced Paranasal Sinus Cancer Employing Proton Irradiation**, *IJROBP* 54:2 (2002)

Harsh GR, Thornton AF, Chapman PH, Bussière MR, Rabinov JD, Loeffler JS: **Proton Beam Stereotactic Radiosurgery of Vestibular Schwannomas**. *Int. J. Radiat. Oncol. Biol. Phys.* 54 (1), p.35-54. (2002)

Fitzek, MM, Thornton AF, Harsch IV GR, Rabinov JD, Munzenrider JE, Lev MH, Anzukiewicz M, Bussière M, Hedley-Whyte TE, Hochberg FH, Pardo FS: **Dose-Escalation with Proton/Photon Irradiation for Dumas-Duport Lower Grade Glioma: Results of an Institutional Phase I/II Trial**. *Int. J. Radiat. Oncol. Biol. Phys.* 51 (1), p.131-137 (2001)

Hug EB, DeVries A, Thornton AF, Munzenrider JE, Pardo FA, Hedley-Whyte TE, Bussièrè M, Ojemann R: **Management of Atypical and Malignant Meningioma: Role of High Dose, 3D Conformal Radiation Therapy**, Journal of Neuro-Oncology 48: 151-160 (2000)

Fitzek MM, Thornton AF, Rabinov JD, Lev MH, Pardo FS, Munzenrider JE, Okunieff P, Bussièrè M, Braun I, Hochberg FH, Hedley-Whyte T, Liebsch NJ, Harsch IV GR: **Accelerated Fractionated Proton/Photon Irradiation to 90 Cobalt Gray Equivalent for Glioblastoma Multiforme: Results of a Phase II Prospective Trial.**, J. Neurosurgery 91:251-260 (1999)

Fitzek MM, Thornton AF, Liebsch NJ, Bussièrè M, Hug EB, Rubin P, Munzenrider JE: **Eye Preservation by Combined Surgery and Conformal Proton Irradiation for Malignant Tumors of the Orbit**, Int. J. Radiat. Oncol. Biol. Phys. 42:1, 330 (1998)

Kim J, Hug EB, Liebsch NJ, Bussièrè M, Finkelstein D, Munzenrider JE: **Tolerance of Optic Nerves to High Dose Fractionated Proton and X-Ray Therapy**. Int. J. Radiat. Oncol. Biol. Phys. 39:1, 272 (1997)

Gall KP, Beatty JF, Bussièrè M, Butler WE, O'Farrell DA, Rosenthal S. **Clinical Commissioning of a Proton Beam Stereotactic Radiosurgery Treatment Planning System**, Med. Phys. 23:6 (1996)

Beard CJ, Kijewski PK, Bussièrè M, Gelman R, Gladstone D, Plunkett ME, Shaffer K, Costello P, Coleman CN: **Analysis of Prostate and Seminal Vesicle Motion: Implications for Treatment Planning**, Int. J. Radiat. Oncol. Biol. Phys. 34:2, 451-458 (1996)

Patrocínio HJ, Bissonnette JP, Bussièrè M, Schreiner LJ: **Limiting Values of Backscatter Factors for Low Energy X-Ray Beams**, Phys. Med. Biol. 41, 239-253 (1996)

Chin LM, Lu HM, Bussièrè M, Harris J: **Optimization of Breast Irradiation Using Computer-Controlled Jaws**, Med. Phys. 21:6 (1994)

Patrocínio HJ, Bussièrè M, Schreiner LJ: **Monte Carlo Calculations of Backscatter Factors for Diagnostic X-Ray Beams**, Med. Phys. 19:3 (1992)

Bissonnette JP, Bussièrè M, Schreiner LJ. **Computation of Central-Axis Depth Doses in Diagnostic Radiology**, Med. Phys. 18:3 (1991)

BOOK CHAPTERS

Chanzwa T, Bussièrè M, Loeffler J, Shih HA, **Chapter: SRS for Nonfunctioning Pituitary Adenoma in Intracranial Stereotactic Radiosurgery, Third Edition**, Editor: Sheehan J, Lunsford D, CRC Press, submitted (2021)

Lebow E, Kang K, Bussièrè M, Shih HA, **Chapter: Craniopharyngioma in Intracranial and Spinal Radiotherapy – A Practical Guide on Treatment Techniques**, Editor: Halasz L, Lo S, Chang EL, Sahgal A, Springer International Publishing 978-3-030-64507-6 (2021)

Lebow E, Bussièrè MR, Shih HA, **Chapter: Introduction to Radiation Therapy in Neuro-Oncology for the Clinical Neurologist**, Editor: Strowd RE, Elsevier (10/2020 – ISBN 9780323694940)

Brownstein JM, Min H, Bussièrè MR, Shih HA, **Chapter: Particle Therapy for the Treatment of Brain Metastases in Radiotherapy in Managing Brain Metastases – A Case-Based Approach**, Editors: Yamada Y, Chang E, Fiveash J, Knisely J, Springer International Publishing 978-3-030-43739-8 (2020)

Brownstein JM, Min H, Bussièrè MR, Shih HA, **Chapter: Proton Radiosurgery in Stereotactic Radiosurgery (SRS): Procedures, Results and Risks**, Editors: Meola A, Chang SD, Nova Medicine and Health ISBN: 978-1-53617-679-7 (2020)

Lebow E, Bussièrè M, Shih HA, **Chapter: Basic Radiobiology and Radiation Physics Primer in Central Nervous System Metastases: Diagnosis and Treatment**, Editor: Ramakrishna et al., Springer International ISBN 978-3-030-42957-7 (2020)

Sanford NN, Bussièrè MR, Loeffler JS, Shih HA, **Chapter 20: Proton Beam Radiotherapy for Treatment of Sporadic Vestibular Schwannoma in Comprehensive Management of Vestibular Schwannoma**, Editors: Carlson et al., Thieme Publishing, (2019)

Atkins KM, Bussièrè M, Shih HA, Part I: **Benign Central Nervous System Tumors, Chapters: Arteriovenous Malformation, Trigeminal Neuralgia, Meningioma, Vestibular Schwannoma, Pituitary Adenoma in Hypofractionated and Stereotactic Radiotherapy**, Editors: Kaidar-Person O, Chen R; Springer International Publishing, p.63-114, ISBN: 978-3-319-92800-5 (2018)

Yerramilli D, Bussièrè MR, Loeffler JS, Shih HA, **Chapter 47: Proton Beam Therapy for CNS Tumors in Adult CNS Radiation Oncology: Principles and Practice**, Editors: Chang EL, Brown P, Lo S, Sahgal A, Suh J; Springer International Publishing, p. 709-722, ISBN: 978-3-319-42877-2 (2018)

Cheng CW, Bussièrè MR, Daartz J, Ma L, Dong L, Langen KM, **ACR-AAPM Technical Standard for the Performance of Proton Beam Radiation Therapy**, (July 2018).

Warren L EG, Bussièrè MR, Shih HA, **Proton Radiation Therapy for Malignant Gliomas: Current Options**, chapter in **Malignant Brain Tumors: State-of-the-Art Treatment**, Editors: Gunel M, Piepmeier, Baehring JM, Springer Publishing, p. 217-232, ISBN 978-3-319-49864-5, 2017

Chen CC, Chapman PH, Bussiere M, Loeffler JS: **Stereotactic Radiosurgery: Basic Principles, Delivery Platforms, and Clinical Applications**, chapter in **Handbook of Neuro-Oncology Neuroimaging**, 2nd Edition, Editors: Newton and Jolesz, Elsevier publishing, ISBN: 978-0-12-800945-1, p.192-214 (2016)

Winey B, Bussière MR, **Small Field Dosimetry: SRS and Eyes**. Chapter in **Principles and Practice of Proton Beam Therapy**, AAPM Monograph No. 37, ISBN 978-1-936366-43-9, June 2015

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Bussière MR, Shih HA, Loeffler JS, **Controversies in Stereotactic Radiosurgery: Chapter - PROTONS**, Thieme Publishing, editors: Sheehan. Gerszten, ISBN: 9781604068412 (2014).

Bussière MR, Shih HA, Cascio E, Chapman PH, Loeffler JS, **Heavy Particle Radiosurgery**, chapter in **Youmans Neurological Surgery**, 6th edition, Editor: Winn HR, Elsevier/Saunders, ISBN: 978-1-4160-5316-3 (2011)

Shepard D, Yu I C, Murphy M, Bussiere M, Bova F: **Treatment Planning for Stereotactic Radiosurgery**, chapter in **Principles and Practice of Stereotactic Radiosurgery**, Editors: Chin and Regine, Springer publishing, ISBN 978-0-387-71070-9, p. 69-90 (2008)

Chen CC, Chapman PH, Bussiere M, Loeffler JS: **Stereotactic Radiosurgery: Basic Principles, Delivery Platforms, and Clinical Applications**, chapter in **Handbook of Neuro-Oncology Neuroimaging**, Editors: Newton and Jolesz, Elsevier publishing, ISBN: 978-0-12-370863-2, p.192-214 (2008)

Shih, HA, Chapman PH, Bussiere MR, Chen CC, Loeffler JS: **Central Nervous System**, chapter in **Proton and Charged Particle Radiotherapy**, Editors: Delaney and Kooy, Lippincott publishing, ISBN: 978-0781765527 , p.140-150 (2007)

Harsh GR, Loeffler JS, Thornton AF, Smith A, Bussière M, Chapman P: **Neurosurgery Clinics of North America, Applications of Radiosurgery**, Kondziolka editor, Stereotactic Proton Radiosurgery, 10:2, 243-256 (1999)

Bussière M: **Monte Carlo Study of Photon Scatter for Determination of Depth Doses at Diagnostic Energies**, 130 pp., M.Sc. Thesis, 1992, Department of Physics, McGill University, Montréal, Canada; abstract form in Canadian Medical Physics Newsletter, July 1993.

POSTERS & PRESENTATIONS

Kim DW, Lee G, Cai E, Chapman P, Bussiere M, Daartz J, Loeffler JS, Shih HA, **Two-Fraction Proton Beam Stereotactic Radiosurgery for Inoperable Cerebral Arteriovenous Malformations**, American Society for Therapeutic Radiation Oncology, (ASTRO), submitted, October 2021, Chicago, IL

Kim DW, Lee G, Cai E, Biller BMK, Swearingen B, Chapman P, Bussiere M, Klibanski A, Loeffler JS, Shih HA, **Proton Stereotactic Radiotherapy for Treatment of Nelson's Syndrome**, American Society for Therapeutic Radiation Oncology (ASTRO), submitted, October 2021, Chicago, IL

Bussiere M, Daartz J, Verburg JM, Depauw N, Kooy HM, Loeffler J, Chapman PH, Shih HA, **Proton Radiosurgery: A Clinical Transition from Passive Scattering to Pencil Beam Scanning**, American Society for Therapeutic Radiation Oncology (ASTRO), October 2021, Chicago, IL

Bussiere M, Daartz J, Verburg JM, Depauw N, Kooy HM, Loeffler J, Chapman PH, Shih HA, **Proton Radiosurgery: Small PBS Field Dosimetry Validation**, American Association of Physicists in Medicine (AAPM), July 2021, Virtual Columbus, OH

Bussiere M, Daartz J, Verburg JM, Depauw N, T. Ruggieri, Loeffler J, Chapman PH, Shih HA, **Proton Radiosurgery: Patient Specific Dosimetric PBS QA**, Particle Therapy Co-Operative Group Conference (PTCOG 59 - online), Virtual June 2021

Dutz A, Agolli L, Butof R, Lühr A, Baumann M, Vermeren X, Geismar D, Lamba N, Shapira EF, Bussiere M, Daly JE, Bussiere MR, Krause M, Timmermann B, Shih HA, Löck S, **Modelling and external validation of late side effects of brain tumours following proton therapy**, ESTRO Conference, November 2020, Vienna, Austria

Winter SF, Vaios EJ, Muzikansky A, Bussière MR, Shih HA, Martinez-Lage M, Loebel F, Vajkoczy P, Dietrich J, **Treatment-related adverse effects in patients with malignant glioma: establishment of key features for pseudoprogression and treatment-induced necrosis**. poster presentation at Neuro-Oncology Society Conference (SNO), November 2019, Phoenix AZ

Sud S, Botticello T, Schwartz A, Bussiere M, Shih H, **Dosimetric Comparison of Protons versus Photons for Treatment of Vestibular Schwannoma**, oral presentation at Radiosurgery Society Annual Scientific Meeting, 06/2020

Sud S, Botticello T, Niemierko A, Daly J, Bussiere M, Shih H, **Dosimetric Comparison of Protons versus Photons for Treatment of Pituitary Adenoma**, oral presentation at Radiosurgery Society Annual Scientific Meeting, March 2019, San Diego

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