

CURRICULUM VITAE

Office:
UH Case Medical Center
Seidman Cancer Center
Department of Radiation Oncology
11100 Euclid Avenue – LL S665
Cleveland, OH, 44106-5000 USA
Phone: (216) 286-3958
Fax: (216) 286-3994
E-mail: valdir.colussi@UHhospitals.org

Valdir Carlos Colussi, Ph.D.

Cleveland, 30 June 2016.

PERSONAL DATA

Date/Place of Birth: 28 March 1966, São Paulo-SP - **Country:** Brazil

Citizenship/VISA: Green Card – permanent resident

Marital Status: Spouse (Larissa); two daughters (Lara, Nubia), one son (Mateus)

Home address: 2923 Lee Rd. Shaker Hts, OH 44120-1835.

EDUCATION

Dates	Degree	Department	Institution
01Sep93 – 08Apr97	Ph.D. Medical Sciences	Neurology	University of Campinas (UNICAMP) Campinas, SP – Brazil
01Mar91 – 07Jul92	M.S. Atomic and Molecular Physics	Physics	University of São Paulo (USP) São Carlos, SP - Brazil
01Aug86 – 19Dec90	B.S. Theoretical and Experimental Physics	Physics	University of São Paulo (USP) São Carlos, SP - Brazil
01Apr88 – 01Mar91	Scientific Initiation	Physics	University of São Paulo (USP) São Carlos, SP - Brazil

ACADEMIC APPOINTMENTS

01 Jul 2015 – present	Associate Professor	Department of Radiation Oncology (CWRU)
01 Jul 2007 – 31 Jun 2015	Assistant Professor	Department of Radiation Oncology (CWRU)
01 Jul 1998 – 31 Dec 2001	Research Associate	Department of Radiation Oncology (CWRU)
08 Apr 97 – 30 Jun 1998	Post-Doctorate fellow	Department of Dermatology (CWRU)

PROFESSIONAL APPOINTMENTS

01 Jul 2006 – present	Clinical Director of Physics	Department of Radiation Oncology UH Case Medical / Seidman Cancer Center
06 Jan 2000 – April 2007	Medical Physicist	Department of Radiation Oncology UH Case Medical / Seidman Cancer Center

BOARD CERTIFICATION and PROFESSIONAL HIGHLIGHTS

2005 – present	The ABR Board Certified: Therapeutic Radiologic Physics
2005 – present	Core Certified in the Continuing Research Education Credit (CREC)
2006 – present	Starting at 9 th Ed. <i>Who's Who in Science and Engineering</i>
2008 – present	Starting at 25 th Ed. <i>Who's Who in the World</i>
2008 – present	Starting at 62 th Ed. <i>Who's Who in America</i>
2009 – present	Certified Radiation Expert (CRE) - Ohio Department of Health

MEMBERSHIP in PROFESSIONAL SOCIETIES

1990 – present	Brazilian Society of Physics (SBF)
1998 – 2006	American Society for Photobiology (ASP)
1999 – present	Fellow, American Society for Lasers in Medicine & Surgery (ASLM)
1999 – present	Full Member, American Association of Physicists in Medicine (AAPM)
2006 – present	Associate, American Society for Radiation Oncology (ASTRO)

HONORS and AWARDS

1992	Master's Degree <u>with distinction</u> – Brazil.
1995	<u>Travel Grant</u> from Federal Association for Experimental biology, FESBE – Brazil
1996	<u>Travel Grant</u> from Brazilian Association of Physicists in Medicine, ABFM – Brazil.
Jun 97 – Jun 98	<u>Fellowship</u> Fundação de Amparo a Pesquisa do Estado de São Paulo, FAPESP – Brazil.
1998	<u>Travel Grant</u> Award from American Society of Photobiology, ASP – USA.
2000	<u>Travel Grant</u> Award from International Conference of Photobiology (ICP) – USA.
2004 & 2006	UH Appreciation – <u>Perfect Attendance</u> .
Sep 2008 & Dec 2010	UH Appreciation – <u>Employee of the Month</u> .
April 2008	Colleague Appreciation (Dr. Elma Baron) – <u>PDT clinical expertise recognition</u> .

ADMINISTRATIVE AND COMMITTEE SERVICE

Aug–Dec 1992	Project co-organizer	Process development - First lab. of Holography for senior students USP São Carlos, SP – Brazil.
29Nov–02Dec1999	Meeting coordinator	II Workshop of Quality Assurance in Radiotherapy. Salvador, BA – Brazil.
2000	Grant reviewer	Civilian Research & Development Foundation (CRDF). USA.
05 – 07 Feb2002	Meeting organizer	1 st International Workshop in Photodynamic Therapy. Rio de Janeiro, RJ - Brazil.
2006 – present	Program director	CAMPEP – Credited Medical Physics Seminar Series (responsible for the implementation) UH Case Medical Center. Cleveland, OH
2006 – 2011	Committee member	New Seidman Cancer Hospital Design Teams UH Case Medical /Seidman Cancer Center
2006 – present	Member	Scientific Advisory Board of the Radiation Resources Core Facility Case Comprehensive Cancer Center
2006 – present	Program Director	Responsible for coordination of the Medical Physics Seminar Series UH Case Medical /Seidman Cancer Center
2007 – present	Member	Department Operations Department of Radiation Oncology
2008 – present	Member	OH (Licensure) Grassroots State Committee AAPM
2008 – 2013	Task Group Member	TG-140 Absolute Calibration of Light Power and Fluence-Rate for PDT AAPM
2009 – present	Member	Radiation Safety Committee UH Case Medical /Seidman Cancer Center
07–09 Oct2009	Abstracts reviewer	III Medical Instrumentation and Image Symposium USP São Carlos-SP.
2009 – present	Member	Radiation Safety protocol Subcommittee UH Case Medical /Seidman Cancer Center
2009 – 2011	Member	Clinical Trial Oversight review UH Department of Radiation Oncology
2011 – present	Guest	Quality Assurance Committee (QACXR) UH Case Medical/ Seidman Cancer Center
2011 – present	Member	Quality Improvement (QI) Committee UH Seidman Cancer Center
2013 (July)	IAEA Host	Fellowship – BRA/13017
2014	Member	Working Group ODH 3701:1-67-12
2013	President-elect	Penn-Ohio Chapter
2014 and 2015	President	AAPM
2014 – present	member	Case Comprehensive Cancer Center
16 April 2016	Workshop Organizer (as Past President)	Quality, Safety, and TG100: The Clinical Hands-On Workshop Initiative of the Penn-Ohio Chapter and Co-sponsored by the AAPM.

REVIEWER OF MANUSCRIPTS FOR JOURNALS

1999 – present	Lasers in Surgery and Medicine – USA
2007	Microscopy Research and Technique – USA
2008	Expert Opinion on Pharmacotherapy – UK
2011 – present	Medical Physics – USA
2012 – present	Brachytherapy – USA
2014	Journal of Applied Clinical Medical Physics – USA
2014 – present	Frontiers in Oncology, section Radiation Oncology – USA
2015 – present	International Journal of Medical Physics, Clinical Engineering and Radiation Oncology – USA
2015 – present	Journal of Medical and Biological Engineering - – USA

ANCILLARY TRAINING AND CONTINUING EDUCATION COURSES ATTENDED

1. 1986₁, 1987_{2,3,4}, 1988₅. Applied Mathematics - Prandiano course. São Paulo, SP – Brazil.
2. 02-14Feb1987. Introduction to Astronomy and Astrophysics (IAG). USP - São Paulo, SP – Brazil
3. 16-21Jan1989. I Summer School in Topics of Atomic and Molecular Physics. USP - São Carlos, SP – Brazil
4. 08-12Jan1990. I Workshop in Medical Physics and Biophysics. USP - Ribeirão Preto, SP – Brazil
5. 15-26Jan1990. II Summer School of Quantum and Non-linear optics. USP - São Carlos – Brazil
6. 29Jan-12Feb1990. Course about Lasers, Institute of Physics and Chemistry of São Carlos/USP/SP – Brazil
7. 07-08Mar1990. I Symposium in Scientific Initiation. USP - São Carlos, SP – Brazil
8. 29Apr1993. I Journey of Prevention, Diagnostic and Habilitation in Neurology. UNICAMP, Campinas, SP – Brazil
9. 25-26Jun1993. Laser as a facilitator of medical proceedings. School of Medicine, UNICAMP, SP – Brazil
10. 22-30Sep1993. Course in Surgery and Medical research, UNICAMP, Campinas, SP – Brazil
11. 23Jan-04Feb1994. IV School of Quantum and Non-linear optics. UNICAMP, Campinas, SP – Brazil
12. 10-12Jul1995. I Workshop Structural Molecular Biology using synchrotron radiation. LNLS - Campinas, SP – Brazil
13. 30Jun-01Jul1995. Course about Hyperbaric Hyperoxia: Technical and Proceedings, UNICAMP, SP – Brazil
14. 04-07Jul1995. Course in Theory and Practice of Laser in Medicine (III LASERMED), UNICAMP, SP – Brazil
15. 10Nov1995. III Forum for Post-Graduated in Neuroscience. School of Medicine, UNICAMP – SP – Brazil
16. 16-17Nov1995. VI Workshop of Laboratory National Light Synchrotron (LNLS), SP – Brazil
17. 17Oct1996. Techniques of Area monitoring for applications of ionizing radiation in medicine *in* III National Forum of Science and Technology in Health. Energy National Center (CNEN) - Brazil
18. Jun1998. Blood, Bone Pathogen training – (CWRU), Cleveland-OH
19. Jun1998. Laboratory Standard Radiation Safety training – (CWRU), Cleveland-OH
20. Sep1998. Athymic nude mice training (Nude Facility – CWRU), Cleveland-OH
21. 17-18Sep1998. Photodynamic Therapy Training, Alliant® Health System, Louisville, KY
22. 27Feb1999. Photodynamic Therapy with emphasis on esophageal & endobronchial malignances, Grant/Riverside Medical Center, Columbus – OH
23. 22Jun1999. Transperineal Prostate Brachytherapy Forum. School of Medicine CWRU , Cleveland-OH
24. 24-25Jul1999. AAPM Radiotherapy Physics Review Course. Nashville-TN
25. 17-18Sep1999. AAPM Penn-Ohio Chapter Fall Symposium. Cleveland-OH
26. Fall1999. Workshops on Teaching and Education. University Center for Innovation in Teaching and Education (UCITE)/CWRU, Cleveland-OH

27. 13May2000. 4th Annual Photodynamic Therapy Workshop. UPMC School of Medicine. Pittsburgh, PA
28. 22-23Jul2000. AAPM Diagnostic Physics Review Course. Chicago-IL
29. 01May2001. CHECKMATE™ CORDIS-Intravascular Brachytherapy System Product and Procedure Training Course, UH Cleveland-OH.
30. 18Oct2001. NOVOSTE Beta-Cath™ System training Program. Independence, Ohio
31. 05April2002. Recent Advances in the Management of Prostate Cancer. Cleveland-OH
32. 16April2002. IMPAC's Midwesterns IMRT Symposium. Cleveland, OH
33. 17May2003. PET Applied to Clinical Oncology. CWRU and UH Cleveland, Beachwood-OH
34. 19-20June2003. Radiation Oncology: Bridging Advanced Technology & Integrated Care. The NCI-Comprehensive Cancer Center of CWRU and UH, Cleveland-OH
35. 26Sep2003. AAPM Penn-Ohio Chapter Fall Symposium. Cleveland-OH
36. 28Jun2004–02Jul04. Physicist's Review in Radiation Oncology Physics. University of Texas, San Antonio, Texas
37. 24-25Jul2004. AAPM Therapy Physics Review Course. Pittsburg -PA
38. 23-24Sep2005. AAPM Penn-Ohio Chapter Fall Symposium. Cleveland-OH
39. 05Nov2005. Young Investigators and Image-Guided Therapy Symposium. Great Lakes Chapter Birmingham-MI
40. 23-26 Jan 2006. PLATO™ Brachytherapy Treatment planning. NUCLETRON – Columbia-MD
41. 27April2006. Pc 4-PDT Retreat. Case Comprehensive Cancer Center, CWRU. Cleveland – Ohio
42. 04May2006. VARIAN Clinical Image-guided IMRT Solutions Forum – Image-Guided IMRT Solutions. Pittsburgh, PA
43. 26 May 2006. MAMMOSITE® Clinical Training Program. Cleveland, OH.
44. 27-29Jul2007. Shielding Methods for Medical Facilities. AAPM Summer School, ABBEY St. John's University. Collegeville, MN.
45. 05-06Oct2007. AAPM Penn-Ohio Chapter Fall Symposium. Cleveland – Ohio
46. 28Oct2007. MAMMOSITE® Web Training Program Medical Physics Module.
47. 10Jan2008. Frameless Array (Z-MED & SonArray) training. VARIAN Medical Systems. Cleveland -OH
48. 06Jun2008. AAPM Penn-Ohio Chapter Spring Symposium. Youngstown-OH
49. 16 July 2009. CLINICAL TRIALS training Competency. UH Cleveland-OH
50. 21-25Jul2009. Clinical Dosimetry Measurements in Radiotherapy. AAPM Summer School, Colorado Springs, CO
51. 15-18 Mar 2010. PERFEXION™ Clinical Training – Principles and Practice. UPMC Pittsburg-PA
52. 08-11Feb2011. Pinnacle³ Physics Training. PHILIPS. Cleveland, OH
53. 23Feb2011. VARIAN Emerging Technologies Clinical Forum – Innovative Radiation Therapy. Cleveland-OH
54. 13May2011. AAPM Penn-Ohio Spring Meeting. Canfield-OH
55. 21-22Sep2012. AAPM Penn-Ohio Fall Symposium, Cleveland-OH
56. 03May2013. AAPM Penn-Ohio Spring Meeting. Boardman, OH
57. 11-12 Oct 2013. AAPM Joint Ohio-River Valley and Penn-Ohio Fall Symposium. Beachwood-OH
58. 16-20 Jun 2013. Quality and Safety in Radiotherapy: Learning the New Approaches in Task Group 100 and Beyond. AAPM Summer School, Colorado Springs, CO. (Monograph No. 36)
59. 04-08 Aug 2013. AAPM Therapy Physics Review Course. Indianapolis-IN
60. 22-26 Jun 2014. SRS/SBRT/SABR: Safely and Accurately Delivering High-Precision, Hypofractionated Treatments. AAPM Summer School, University of Vermont Burlington, VT.

TEACHING ACTIVITIES

Mar-Jun1986	Professor Assistant	Pontifícia Universidade Católica de São Paulo, São Paulo, SP – Brazil Course of Experimental Physics I (Mechanics) for undergraduate students
Mar-Jun1989	Professor Assistant	University of São Paulo (USP/SP). IFSC/SP, São Carlos, SP – Brazil Course of Physics I and II (Newtonian Mechanics) for undergraduate students
Mar-Jun1992	Professor Assistant	University of São Paulo (USP/SP). IFSC/SP, São Carlos, SP – Brazil Course of Experimental Physics III (Electronics) for undergraduate students
Aug-Nov1992	Professor Assistant	University of São Paulo (USP/SP). IFSC/SP, São Carlos, SP – Brazil Course of Experimental Physics IV (Optics) for undergraduate students
Aug-Nov1992	Lab coordinator	University of São Paulo (USP/SP). IFSC/SP - São Carlos, SP – Brazil <i>Protocol for preparing of holographic diffraction grating</i> (Physics Lab).
2005 - 2009	Co – director	Responsible for the Medical Physics course for Radiation Oncology Residents (co-responsible for implementation of ASTRO'2007 guidelines) UH Case Medical Center. Cleveland, OH
2005-2006	Instructor residents	UH Case Medical Center / Seidman Cancer Center, Cleveland, OH 1. Interactions of Ionizing Radiation 2. Measurement of Absorbed Dose 3. Dose Distribution and Scatter Analysis 4. A System of Dosimetric Calculations 6. Special Procedures 7. Teletherapy Special Procedures 8. Brachytherapy: theory 9. Laser Procedures: Photodynamic Therapy
2006	Mentor	Web – Based Dosimetry Training Tool-Stanford University
2006-2007	Instructor residents	UH Case Medical Center / Seidman Cancer Center, Cleveland, OH 1. Brachytherapy: Theory 2. Brachytherapy: Clinical 3. Special Procedures 4. Photodynamic Therapy CLASS (CAMPEP physics seminar)
2007-2008	Instructor residents	UH Case Medical Center / Seidman Cancer Center, Cleveland, OH 1. Brachytherapy Theory (I) & Brachytherapy Clinical (II) – 2 classes 2. Special Procedures
2008-2009	Instructor residents	UH Case Medical Center / Seidman Cancer Center, Cleveland, OH 1. Brachytherapy I, II, III – 3 classes
2009-2010	Instructor residents	UH Case Medical Center / Seidman Cancer Center, Cleveland, OH 1. Radiation measurements and calibration 2. Measurement of Ionizing Radiation and Absorbed Dose (TG-51) 3. Photodynamic Therapy 4. Brachytherapy I, II, III (day Workshop) – 7 hours total 5. External Beam Special Procedures (IORT, TSEI, TBI) and Gamma-Knife
2010-2011	Instructor residents	UH Case Medical Center / Seidman Cancer Center, Cleveland, OH 1. Radiation measurements and calibration 2. Special Procedures IORT, TSEI, TBI, Hyperthermia 3. Brachytherapy I-II-III (short workshop) – 4 hours total 4. Laser Procedures: Photodynamic Therapy
2011-2012	Instructor residents	UH Case Medical Center / Seidman Cancer Center, Cleveland, OH 1. Radiation Measurement and Calibration (Class I & II) 2. Brachytherapy I & II (short workshop) – 2 classes 3. Special Procedures IORT TSEI TBI Hyperthermia
2012-2013	Instructor residents	UH Case Medical Center / Seidman Cancer Center, Cleveland, OH 1. Essentials of Brachytherapy I-II-III – 3 classes 2. Special Procedures IORT, TSEI, TBI, Hyperthermia
2013-2016	Instructor residents	UH Case Medical Center / Seidman Cancer Center, Cleveland, OH 1. Radiation Measurements and Calibration + Dosimeters(I, II, III) – 4 classes 2. Special Procedures IORT, TSEI, TBI, Hyperthermia 3. Brachytherapy (I-II-III)

PHYSICS SEMINAR FOR MAINTENANCE OF CERTIFICATE (MOC) ACTIVITIES

17 Feb 2006	Host & Speaker	CT-Based Brachytherapy
16 Jun 2006	Host & Speaker	Special Procedures in Radiation Oncology
20 Oct 2006	Host & Speaker	Low Dose-Rate cell Irradiator: Construction & Experiment
16 Mar 2007	Host & Speaker	Photodynamic Therapy –A relatively new modality of cancer treatment
17 Oct 2008	Host & Speaker	Decoding MOC (Maintenance of Certification) for Medical Physicists
28 May 2010	Host & Speaker	Gamma Knife Perfexion: Principles and Clinical Application
16 Dec 2011	Host & Speaker	IntraOperative RT using MOBETRON: UH Experience

RESEARCH SUPPORT

PI: Oleinick, PhD	NIH/NCI	\$
15 Jul 1999 – 30 Apr 2005.	Core A (Nieminen)	\$ (5%)
	CWRU 1Y97: Phase I trial of Pc 4-PDT for cutaneous malignancies	
	Phthalocyanine Photodynamic Therapy: Mechanistic Studies	
	Role: Co-investigator	
PI: Robert Maciunas, MD	NIH/NCI	\$
01 May 2005 - 30 Sep 2005	Hetzel	\$ (10%)
	CWRU 4303: A randomized prospective two-arm clinical trial of high light dose and low light dose photodynamic therapy in the treatment of recurrent malignant supratentorial gliomas using porfimer sodium (photofrin)	
	Role: Co-investigator	
PI: Robert Maciunas, MD	NIH/NCI	\$
01 Oct 2005 - 31 Dec 2006	Fred Hetzel	\$ (10%)
	CWRU 4303: Fluorescence-Guided Detection of Malignant Gliomas: A Study using 5-aminolevulinic (ALA) induced protoporphyrin IX (Pp IX) in a multi-centre clinical trial.	
	Role: Co-investigator	
PI: Kevin D. Cooper, MD	NIH/NIAMS	\$
24 Sep 2007 – 31 Aug 2012	Dr. Elma Baron	\$ (5%)
	Psoriasis Center of Research Translation (CORT) Grant. Pc 4-PDT for Psoriasis	
	Role: Co-investigator	

CLINICAL INVESTIGATION (IRB)

Co-Investigator	CASE9Z13 - Phase I Trial of Escalated Doses of Targeted Marrow Irradiation (TMI) Combined with Fludarabine and Busulfan as conditioning regimen for allogeneic hematopoietic progenitor cell transplantation
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LECTURES BY INVITATION

Aug 1997	Optics excitation of a photosensitizer as mediator for ablating tumors process Case Western Reserve University – Cleveland, OH
Dec 1998	Photodynamic therapy: A “relatively” new modality for cancer treatment University of São Paulo. Institute of Physics of São Carlos - Brazil
Sep 1999	Dosimetry in Photodynamic therapy Penn-Ohio Chapter Fall Symposium (AAPM) – Cleveland, USA
Jan 2003	MOBETRON – Physics Point of View University Hospitals of Cleveland – IORT Interactive Workshop– Cleveland, USA
26-27Sep2003	Intraoperative Radiation Using MOBETRON – University Hospitals Experience PENN-OHIO Fall Symposium (AAPM) – Cleveland, USA
17Feb2005	CT-Based Brachytherapy University Hospitals of Cleveland - Department of Radiation Oncology – Cleveland, OH
16Aug2006	Image-Guided Radiation Therapy – USA Experience Porto Ferreira City Hall – São Paulo-Brazil – Secretaria da Saúde
13Jan2011	IntraOperative Radiation Therapy: Clinical Experience Cleveland Clinic Foundation – Cleveland, OH
03Dec2013	Brachytherapy: Back to the Future? University Hospitals Case/ Seidman Cancer Center – Cleveland, OH (Grand Rounds)

IN THE NEWS

- 27 Apr 1997 Correo Popular – Campinas/SP, Brazil. “Physicist induces cancer cells to suicide” (in Portuguese).
- 07 Jan 2001 Folha de São Paulo – São Paulo/SP, Brazil. “USA test new drug against cancer.” (in Portuguese).
- 26 Jun 2001 Plain Dealer – Cleveland, OH, USA. “Erin’s Race” (http://www.cleveland.com/living_galleries/)
- TOPICAL Pc 4-PDT: UHHS Braking News and Newsroom “New Photodynamic Therapy Drug Tested Against Cancer” <http://www.uhhs.com/Article> (see also the video)
- 2004 TOPICAL Pc 4-PDT: CASE News Center “New photodynamic therapy offers hope as cancer treatment: Case research team heading to home base with Pc 4”. (<http://www.case.edu/news/2004/>)
- UHHS (Dr. Maciunas and PDT team) Physicians Update “Light at tunnel’s end for Brain Cancer Patients”. <http://www.uhhs.com/Article>
- 05 Mar 2010 Akron Beacon Journal “University Hospitals startup company opens in Akron”: <http://www.ohio.com/news/>
- 11 April 2011 UH Case/Seidman Medical Center FDA-AKRON “New cancer center is a first for region”: <http://www.ohio.com/news/first/new-cancer-center>
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BIBLIOGRAPHY**CHAPTERS IN BOOKS**

1. CH Sibata, and VC Colussi. *Computerized planning for breast cancer* (in Portuguese). In: Quality Assurance Program in Radiotherapy. 1st Seminar in Radiotherapy (29Nov1999) – Brazil. http://www.inca.gov.br/pqrl/download/tec_int/cap2_p1.pdf
2. SS Lo, AE Sloan, VC Colussi, JW Sohn, BW Wessels, N Galanopoulos, JP Miller, A Hofer, R Fine, WR Selman, M Machtay. Stereotactic Radiosurgery. *Meds Rec. Nov 2011* <http://emedicine.medscape.com/article/1423298-overview#showall>.

PEER REVIEWED PUBLICATIONS IN SCIENTIFIC JOURNALS

1. ME Firmino, VC Colussi, SC Zílio e VS Bagnato. Project, construction and test of an experimental system for neutral atomic deceleration (in Portuguese). *Rev. de Física Aplicada e Instrumentação* 1989, 8(4):368-388.
 2. VC Colussi, AM Cansian. Holographic diffraction grading: Efficient and cheaper option (in Portuguese). *Rev. Bras. Ensino de Física*. 1995, 17(3):209-214.
 3. VC Colussi, EMD Nicola, JH Nicola. Phototherapy, photochemotherapy and some photosensitizers (in Portuguese). *Rev. Assoc. Med. Bras*. 1996. 42(4):229-236.
 4. VC Colussi, DK Feyes and H Mukhtar: Perspectives of photodynamic therapy for skin diseases (Review). *Skin Pharmacology and Applied Skin Physiology* 1998. 11(6):336-346 (Special issue in Porphyria).
 5. VC Colussi, DK Feyes, JW Mulvihill, Yin-S. Li, ME Kenney, CA Elmets, NL Oleinick and H Mukhtar. Phthalocyanine 4 (Pc 4) Photodynamic therapy of human OVCAR-3 tumors xenografts. *Photochem Photobiol* 1999. 69(2):236-241.
 6. CH Sibata, VC Colussi, NL Oleinick, TJ Kinsella: Photodynamic Therapy: A new concept in medical treatment (Review). *Brazilian Journal of Medicine and Biological Research* 2000 33(8):869-880.
 7. D Abraham, VC Colussi, D Shina and CH Sibata. TBI Treatment Planning Using the ADAC Pinnacle Treatment Planning System. *Medical Dosimetry* 2000; Vol. 25(4):219-224.
 8. CH Sibata, VC Colussi, NL Oleinick, TJ Kinsella. Photodynamic Therapy in Oncology. *Expert Opin Pharmacother*. 2001. 2(6):917-927 (REVIEW).
 9. VC Colussi, AS Beddar, TJ Kinsella, and CH Sibata. *In vivo* dosimetry using a single diode for megavoltage photon beam radiotherapy: Implementation and response characterization. *Journal of Applied Clinical Medical Physics*. Fall 2001. 2(4):210-218.
 10. RJ Ellis, A Vertocnik, E Kim, H Zhou, B Young, B Sodee, P Fu, S Beddar, V Colussi, JP Spirnak, KH Dinchman, M Resnick, and TJ Kinsella, Four-year biochemical outcome following radioimmunoguided transperineal brachytherapy for patients with prostate adenocarcinoma. *Int J Radiat Oncol Biol Phys*. 2003; 57(2): 362-370.
 11. RJ Ellis, A Vertocnik, B Sodee, H Zhou, E Kim, B Young, P Fu, V Colussi, JP Spirnak, KH Dinchman, and MI Resnick. Combination conformal radiotherapy and radioimmunoguided transperineal Pd-103 implantation for patients with intermediate and unfavorable risk prostate adenocarcinoma. *Brachytherapy* 2003; 2(4): 215-222.
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12. Y Seo, T Yan, JE Schupp, V Colussi, KL Taylor, TJ Kinsella. Differential radiosensitization in DNA mismatch repair-proficient and -deficient human colon cancer xenografts with 5-iodo-2-pyrimidinone-2'-deoxyribose. *Clin Cancer Res*. 2004 Nov 15; 10(22):7520-8.
13. T Korytko, T Radivoyevitch, V Colussi, BW Wessels, K Pillai, R Maciunas, DB Einstein. 12 Gy Gamma-Knife radiosurgical volume is a predictor for radiation necrosis in non-AVM intracranial tumors. *Int J Radiat Oncology Biol Phys*. 2006; 64(2): 419-424.
14. C Kunos, V Colussi, P Getty, T Kinsella. Intraoperative Electrons Radiotherapy for Extremity Sarcomas Does Not Increase Acute or Late Morbidity. *Clinical Orthopaedics and Related Research*. 2006; 446: 247-252.
15. RJ Ellis, H Zhou, EY Kim, P Fu, DA Kaminsky, DB Sodee, V Colussi, WZ Vance, JP Spirnak, C Kim, and MI Resnick. Biochemical disease-free survival rates following definitive low-dose-rate prostate brachytherapy with dose escalation to biologic target volumes identified with SPECT/CT capromab pendetide. *Brachytherapy* 2007 6(1):16-25.
16. JD Miller, ED Baron, H Scull, A Hsia, JC Berlin, T McCormick, VC Colussi, ME Kenney, KD Cooper, and NL Oleinick. Photodynamic therapy with the phthalocyanine photosensitizer Pc 4: The case experience with preclinical mechanistic and early clinical-translational studies. *Toxicol Appl Pharmacol*. 2007 Nov 1, 224(3):290-299. [Epub 2007 Feb 15. Review]
17. RJ Ellis, H Zhou, DA Kaminsky, P Fu, EY Kim, DB Sodee, V Colussi, JP Spirnak, CC Whalen, and MI Resnick. Rectal morbidity after permanent prostate brachytherapy with dose escalation to biologic target volumes identified by SPECT/CT fusion. *Brachytherapy* 2007 Apr-Jun 6(2):149-156.
18. EH Zhou, RJ Ellis, E Cherullo, V Colussi, F Xu, W-D Chen, S Gupta, CC Whalen, D Bodner, MI Resnick, AA Rimm, and SM Koroukian. Radiotherapy and Survival in Prostate Cancer Patients: A population-based study. *Int. J. Radiat Oncol Bio. Phys*. 2009 Jan 1;73(1):15-23.
19. ED Baron, CL Malbasa, D Santo-Domingo, JD Miller, KK Hanneman, AH Hsia, NL Oleinick, VC Colussi, and KD Cooper. Silicon Phthalocyanine (Pc 4) Photodynamic Therapy is a Safe Modality for Cutaneous Neoplasms: Results of a Phase 1 Clinical Trial. *Lasers Surg Med* 2010 Dec;42(10):728-735.
20. C Kunos, C Woods, VC Colussi, FW Abdul-Karim, and S Waggoner. Low-Dose-Rate Brachytherapy for Treatment of Uterine Didelphys Malignancy. *J Clin Oncol*. 2011 Feb 10;29(5):e104-6.
21. TJ Kinsella, ED Baron, VC Colussi, KD Cooper, CL Hoppel, ST Ingalls, ME Kenney, X Li, NL Oleinick, SR Stevens and SC Remick. Preliminary clinical and pharmacologic investigation of photodynamic therapy with the silicon phthalocyanine photosensitizer Pc 4 for primary or metastatic cutaneous cancers. *Frontiers in Oncology*. 2011 Jun;1(14):1-6.
22. CA Kunos, VC Colussi, J Pink, T Radivoyevitch, NL Oleinick. Radiosensitization of human cervical cancer cells by inhibiting ribonucleotide reductase: enhanced radiation response at low dose rates. *Int J Radiat Oncol Biol Phys*. 2011 Jul 15;80(4):1198-204. Epub 2011 Apr 4.
23. DB Einstein, B Wessels, B Bangert, P Fu, AD Nelson, M Cohen, S Sagar, J Lewis, A Sloan, Y Zheng, J Williams, V Colussi, R Vinkler, R Maciunas. Phase II Trial of Radiosurgery to Magnetic Resonance Spectroscopy-Defined High-Risk Tumor Volumes in Patients with Glioblastoma Multiform . *Int J Radiat Oncol Biol Phys*. 2012 Nov 1;84(3):668-74.
24. TC Zhu, C Bonnerup, VC Colussi, ML Dowell, JC Finlay, L Lilje, TW Slowey, C Sibata. Absolute calibration of optical power for PDT: Report of AAPM TG140. *Med Phys*.40(8), August 2013: 081501-13.

SHORT PAPERS AND PROCEEDINGS (PEER REVIEWED)

1. VC Colussi, ME Firmino, CA Faria Leite, RJ Napolitano, VS Bagnato. Experimental system for atoms deceleration via radiation pressure (in Portuguese). *Proceeding III State Symposium of Laser and Laser Applications. Campinas/SP – Oct/1990.*
2. VS Bagnato, VC Colussi, E Marega Jr, C Salomon, SC Zilio; Adiabatic following and optical pumping effects in the process of slowing atoms with the Zeeman tuning technique. *International Quantum Electronics Conference technical Digest, 17. Anaheim, California. May/1990.*
3. VC Colussi, LG Marcassa, SC Zilio, VS Bagnato. Acceleration of Sodium atomic beam (in Portuguese). *Proceeding V State Symposium of Laser and Laser Applications: pg. 129-132. IPEN - SP. Oct/1992.*
4. VC Colussi, EMD Nicola, JH Nicola. Photodynamic therapy of cancer: A fluorescence distribution study in normal tissue (in Portuguese). *Proceeding of VI State Symposium of Laser and Laser Applications: pg. 76-78. SENAC - São Carlos - SP. Oct/1994.*
5. VC Colussi, AM Cansiam. Holographic diffraction grade confection for teaching (in Portuguese). XIX ENFMC. Águas de Lindóia - SP. 02-06/Sep/1996.
6. PE Iazetti, VC Colussi, D Cabral, EMD Nicola, C Hackel, K Metze, JH Nicola. Photodynamic therapy in hyperbaric hyperoxia: A clinical strategy to be developed in cancer treatment. *Proceeding XXII Annual meeting of the European Underwater Baromedical Society – XII International Congress on Hyperbaric Medicine, p. 73-79, Milano, Italy. 04-08/Sep/1996.*
7. VC Colussi, K Metze, PE Iazetti, DF Cabral, C Hackel, EMD Nicola, JH Nicola. Photodynamic therapy for Cancer in hyperbaric hyperoxia: A clinical possibility, an enhancing the technique. *Proceeding of III National Forum of Science and Technology in Health.-Campos do Jordão – SP. 17-20/Oct/1996.*
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11. VC Colussi, D Abraham, D Shina, TJ Kinsella, CH Sibata. ADAC Pinnacle treatment planning for Total Body Irradiation. VI Congresso brasileiro de Física Médica. 04-06 Oct 2001. Rio de Janeiro, RJ, Brazil.
12. VC Colussi, DK Feyes, JR Mourant, TR Giovanielli, H Mukhtar, NL Oleinick, IJ Bigio, TJ Kinsella, CH Sibata. Non-Invasive measurements of Phthalocyanine 4 (Pc 4) concentration using Elastic Scattering Spectroscopic device for Photodynamic Therapy (PDT). VI Congresso brasileiro de Física Médica. 04-06 Oct 2001. Rio de Janeiro, RJ, Brazil.
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PRESENTATIONS AND ABSTRACTS IN PROCEEDINGS

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3. ME Firmino, CAF Leite, VC Colussi, AM Tuboy, SC Zilio, VS Bagnato. Construction and test of experimental system for decelerating an atomic beam (in Portuguese). *XII ENFMC (National Meeting of Condensed Matter). Caxambú - MG. 1989.*
4. VC Colussi, E Marega Jr, SC Zilio, VS Bagnato. Study of adiabatic following and optic pumping in atomic decelerating (in Portuguese). *II Summer School "Jorge André Swieca": Quantum and Non-linear Optics: IFQ São Carlos/USP. Jan/1990.*
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6. VC Colussi, ME Firmino, VS Bagnato, CAF Leite. Decelerating and focalizing of neutral atoms (in Portuguese). *42^a SBPC Annual Meeting. Federal University of Rio Grande do Sul - Porto Alegre - RS. 1990.*
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8. VS Bagnato, VC Colussi, E Marega Jr, SC Zilio. Optical pumping deceleration of sodium atoms using Zeeman technique (in Portuguese). *IV SELA (State Symposium of Laser and Applications). CTA - São José dos Campos - SP. 1990.*
9. LG Marcassa, VC Colussi, SC Zilio, VS Bagnato. Production of monoenergetic atomic beam by radiation pressure (in Portuguese). *XIV ENFMC. Caxambú - MG. 1991.*
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31. VC Colussi, JW Mulvihill, TJ Kinsella, and CH Sibata. Isofluence, Flatness and Symmetry Considerations of Light Irradiation Devices used in Photodynamic Therapy. American Society for Photobiology, 13th International Meeting of Photobiology, July 1-6, 2000 San Francisco, California.
32. VC Colussi, DK Feyes, JR Mourant, H Mukhtar, TJ Kinsella, IJ Bigio, and CH Sibata. Determination of Phthalocyanine 4 (Pc 4) Concentration in Tissue by a New Non-Invasive, Site-Specific Spectroscopic Device. American Society for Photobiology, 13th International Meeting of Photobiology, July 1-6, 2000 San Francisco, California.
33. DK Feyes, VC Colussi, H Mukhtar. Nitric Oxide (NO) Scavengers Suppress Photodynamic Therapy Mediated Apoptosis and Tumor Response *In Vivo*. American Society for Photobiology, 13th International Meeting of Photobiology, July 1-6, 2000 San Francisco, California.
34. VC Colussi, DK Feyes, JR Mourant, H Mukhtar, TJ Kinsella, IJ Bigio, and CH Sibata. Phthalocyanine 4 (Pc 4) Concentration Dosimetry for *In Vivo* Photodynamic Therapy using a New Non-Invasive, Site-Specific Spectroscopic Device. 42th Annual Meeting of the American Association of Physicists in Medicine July 23 - 28, 2000 Chicago.
35. VC Colussi, JW Mulvihill, TJ Kinsella, and CH Sibata. Film Dosimetry for Quantitative Flatness and Symmetry of Light Irradiation Devices Used in Photodynamic Therapy. 42th Annual Meeting of the American Association of Physicists in Medicine July 23 - 28, 2000 Chicago.
36. RJ Ellis, A Vertocnik, EY Kim, H Zhou, DB Sodee, JP Spirmak, KH Dinchman, VC Colussi, MI Resnick. Feasibility of Radioimmunoguided prostate brachytherapy salvage for local failure following external beam radiation. *24th Annual Meeting of the American Brachytherapy Society May 08 - 10, 2003 New York City*.

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 39. J Syh, B White, K Pillai, V Colussi, J Sohn, Y Zheng, D Einstein, R Maciunas and B Wessels. A Study of Effectiveness of Stereotactic Head Frame Distortion on The Gamma-Knife Automatic Positioning System by Stress of Screw Fixation. *48th Annual Meeting of the American Association of Physicists in Medicine July 30-Aug 3, 2006 Orlando, Florida.*
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 41. JG Scott, R Carnell; M Resnick, M Stovsky, V Colussi, and DB Einstein. Prognostic Value of Prostate Specific Antigen (PSA) Testing One Month after Prostate Seed Implantation Brachytherapy. *ASCO Annual Meeting 02-05 Jun-24/2007.*
 42. TK Lee, WJ Cottrell, V Colussi, ED Baron, TH Foster. Fluorescence and Reflectance Spectroscopies in Clinical Trial of Pc 4-PDT in cutaneous T-cell lymphoma. *Proc. SPIE Photonics West p. 88-94. In PDT Delivery/Tomography (Section S7), Ed. San Jose, California USA, 19-24 Jan/2008.*
 43. J Choe, V Colussi, R Vinkler, D Einstein. Dosimetric Factors that Predict for Acute Urinary Toxicity Following Prostate Seed Implant Brachytherapy with Real-Time Intraoperative Planning. *ASTRO 50th Annual Meeting 2008. Boston-MA.*
 44. VC Colussi, NL Oleinick, WD Sedwick, DA Boothman, BW Wessels, CH Sibata, CA Kunos., *ASTRO 2010 (Accepted but withdrew).*
 45. WC Chen, T Zagar, R Leeming, R Shenk, P Silverman, VC Colussi, JA Lyons. Partial breast re-irradiation for patients with ipsilateral breast tumor recurrence (IBTR) following breast conserving therapy (BCT) for early stage breast cancer. *6th International Conference of the International Society of Intraoperative Radiation Therapy, October 14-16, 2010 in Scottsdale, Arizona.*
 46. J Fabien, Y Zheng, L Anton, V Colussi, C Shields, G Shields, and B Wessels. A Comparison of Dosimetric Characteristics between Elekta Synergy Linear Accelerators and MLCi2 and Beam Modulator Collimator Heads. *2011 Joint AAPM/COMP Meeting July 31-Aug 4, 2011. Vancouver.*
 47. JC Rhodes, S Campbell, W Shields, J Fabien, V Colussi, B Wessels. Utilizing Collimator Rotation to Increase Maximum Treatable Target Dimensions Using An Elekta Synergy-S with Beam Modulator Multileaf Collimator. *54th Annual Meeting of the American Association of Physicists in Medicine July 29-Aug 2, 2012. Charlotte, NC.*
 48. A Anton, W Gordon, YZ Zheng, R Ellis, S Dill, JW Piper, BW Wessels, VC Colussi. Dosimetry Evaluation of MIM Symphony LDR Brachytherapy Treatment Planning for Prostate Seed Implant (PSI). *ASTRO 54th Annual Meeting Oct 28-31, 2012. Boston, MA.*
 49. A Bao, Y Zheng, S Ware, V Colussi, R Ellis, B Wessels. MRI-Guided Targeted Prostate Cancer Radiation Therapy: Imaging, Diagnosis, and Image Co-Registration. *AAPM 55th Annual Meeting. Aug 04-08, 2013. Indianapolis. IN.*
 50. A Bao, Y Zheng, R Ellis, J Fabien, C Rhodes V Colussi, B Wessels. MRI-Guided Targeted Prostate Cancer Radiation Therapy: Multi-Image Co-Registration. *AAPM 55th Annual Meeting. Aug 04-08, 2013. Indianapolis. IN.*
 51. K Wilson, V Colussi, M Ohm, T Combine, F Deibel, B Wessels. *AAPM Penn-Ohio Chapter – History Presentation. AAPM 55th Annual Meeting. Aug 04-08, 2013. Indianapolis. IN.*
 52. T Sherertz, R Ellis, V Colussi, M Mislmani, B Traugher, K Herrman, T Podder. Split-Ring Applicator with Interstitial Needle for Improved Volumetric Coverage in HDR Brachytherapy for Cervical Cancer. *56th Annual Meeting of the American Association of Physicists in Medicine July 20-24, 2014. Austin, TX.*
 53. J Cantley, V Colussi. Characterization of a New Oblong Cone for Use with the Intraoperative Mobetron Unit. *Med Phys. 2015 Jun;42 (6):3369. AAPM 57th Annual Meeting. July 12-16, 2015. Anaheim, CA.*
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TECHNICAL ASSISTANCE ACKNOWLEDGED

1. VS Bagnato, A Aspect and SC Zilio. Study of Laser Deceleration of an atomic beam by monitoring the fluorescence along the deceleration path. *Optics Communication* 1989. 72(1,2): 76-81. Technical Assistance.
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2. VS Bagnato, C Salomon, E Marega Jr., and SC Zilio. Influence of adiabatic following and optical pumping in the production of and intense steady flux of slow atoms. *Optical Society of America* 1991. 8(3): 497-501. Technical Assistance
3. VS Bagnato. Slowing atoms with laser. Proceeding of the memorial symposium on lasers and applications and selected scientific works of Prof. Sergio PS Porto. Technical Support
4. VCM Carvalho, CAS Melo, VS Bagnato, JR Perussi. Comparison of the effects of cationic and anionic porphyrins in tumor cells under illumination of argon ion laser. *Laser Physics* 2002 12(10): 1314-1319. For the critical reading of manuscript.
5. VS Bagnato, A Aspect and SC Zilio. Study of Laser Deceleration of an atomic beam by monitoring the fluorescence along the deceleration path. *Optics Communication* 1989. 72(1,2): 76-81. Technical Assistance .
6. AS Beddar, TM Briere and M Ouzidane. Intraoperative radiation therapy using a mobile electron linear accelerator: field matching for large-field electron irradiation. *Phys. Med. Biol.* 2006 51(18) N331-7. Technical Assistance.
7. TK Lee, ED Baron, and TH Foster. Monitoring Pc 4 photodynamic therapy in clinical trials of cutaneous T-cell lymphoma using noninvasive spectroscopy. *J Biomed Opt.* 2008. 2006 13(3): 030507. Clinical Expertise.
8. AAPM Report N^o. 87. Diode in vivo Dosimetry for Patients Receiving External Beam Radiation Therapy: Report of Task Group 62 of the Radiation Therapy Committee (February 2005). Ref 61 page 68

A) Basic Research

1. University of São Paulo (USP/SP). IFSC/SP, São Carlos, SP – Brazil

Atomic and Molecular Physics
Spectroscopic system
Coherent Dye laser System (Argon: INNOVA 100 and 200, Dye laser: 599 and 699)
Perkin-Elmer spectrophotometer
Vacuum systems (Mechanical, Diffusers and Ionic pumps)
Electro-Optics Modulators

B) Experimental Medicine

1. University of Campinas (UNICAMP). School of Medicine, Campinas Brazil

- 1.1. Center of experimental and surgical medicine. <http://venus.nmce-fcm.unicamp.br>
Photodynamic Therapy related
Photosensitizers: Hematoporphirin derivative (HpD), δ -Aminolevulinic acid (δ -ALA)
Tumor cells: Walker 256 – maintenance and animal model
Survival and non-survival rats (Wistar) surgery technique
- 1.2. Hyperbaric Medicine Center, Hospital das Clínicas <http://www.hospvirt.org.br/medhiperbarica>
Hyperbaric Oxygen Therapy (HBO) – Experimental chamber construction and its use

2. Case Western Reserve University. Departments of Radiation Oncology and Dermatology, Cleveland, Ohio.

Photodynamic therapy (PDT) system: Diagnosis (Fluorescence) and Treatment
Optics system:
Dye laser system for Photofrin[®]-PDT (*Lambda Plus PDL-1 – Coherent, Inc.*)
Diode laser array system for Pc 4-PDT (*Applied Optronics model 670-250HHL diode laser system*)
Lens, Optical Fibers and Arc Xenon lamp
Photosensitizers:
Photofrin[®] (FDA Approved for PDT), Phthalocyanine (Pc 4)
Tumor Systems (maintenance and use)
Radiation Induced Fibrosarcoma (RIF-1), Skin Carcinoma - A431, Prostate – PC 3, OVCAR-3
Assay to study mechanisms of PDT (Apoptosis and necrosis)
DNA fragmentation assay (Agarose gel electrophoresis) and
Western Blotting analysis and antibodies, Elisa[®] Kit
Laboratory animals (Athymic nude, C3H/He, transgenic mouse)
Survival and non survival surgery/ procedures in rodents training (IACUC– CWRU) - Sep/1998
Surgical and anesthetic techniques
Radioactive procedures (Bio-distribution of [¹⁴C] – Pc 4)
High Performance Liquid Chromatography (HPLC)
Low dose-rate cell irradiator

CLINICAL SERVICES:

1. **Hospital Amaral Carvalho** <http://eu.ansp.br/~sbed/tdeve.html>. (01/Aug/92 – 30/Mar/1993.) Jaú, Brazil.
Laser surgery researcher - CO₂ Surgical laser system
2. **University of Campinas** <http://www.hc.unicamp.br>. (01/Apr/1993 – 08/Apr/1997.) Campinas, SP – Brazil.
Part time laser surgery technician - Laser Center, Hospital das Clínicas
3. **University Hospitals Case Medical Center.** Department of Radiation Oncology.
Photodynamic Therapy
Implementation of Photodynamic Therapy Center
Photosensitizers: (Photofrin-PDT, Systemic and topical Pc 4-PDT, Topical ALA-PDT)
Lasers: COHERENT PDL, DIOMED-PDT630, AOC-675
PDT Clinical Trial (Photofrin Balloon)
Pc 4-PDT (Systemic; Topical: Small cell and Psoriasis)
Brain-PDT

Radiation Therapy

External Beams

Pinnacle[®]-ADAC Medical System (versions 6.2 - 9.2 commissioning)
TG-51 Calibration, TG-40/142 Quality Assurance, Linacs commissioning and monthly calibrations
Implementation of Effective SSD for Electron Beams
Implementation of *In-Vivo* Dosimetry Diodes (Sun Nuclear <http://www.sunnuclear.com>)
Implementation of Enhanced Dynamic Wedge (EDW) CL2100 C/D
Implementation of Virtual Wedge (VW) – Primus-Siemens Machines
2008 Implementation of Inhomogeneity Correction for Treatment planning
Commissioning of Total Body Irradiation procedures
2009 Responsible for the QARC approval for TBI procedures
Commissioning of Total Skin Electron Irradiation procedures
Special Dosimetry
LINACS: (CL2100, Primus, Ximatron, CL4/100. MeVtron 6/10)
2011 ELEKTA Synergy/S (BM, MLCi2, Agility) Acceptance, Commissioning and maintenance
2014 Implementation of SBRT program at Seidman Cancer Center
2015 Implementation of SBRT MU Hand-calculation for emergency procedures

Intraoperative: MOBETRON <http://www.intraopmedical.com>

Commissioning of the thin-walled breast cone applicators
Acceptance and Commissioning of the MOBETRON unit 052.
Commissioning of the Oblong cone for the MOBETRON

Shielding:

2008-2009 Reviewer of the Shielding for the new Seidman Cancer center

CT: AQSIM, GE, Siemens Somaton

Brachytherapy

Low Dose Rate (LDR) Brachytherapy

Prostate Seed Implant
Implementation of ROSSES MEDICAL system <http://www.rossmed.com>
Cs- 137 Tandem & Ovoid using Cs-137
SYED Neblett template
EYE Plaque
Intravascular Brachytherapy (CHECKMATE and NOVOSTE system)

High Dose Rate (HDR) Brachytherapy (NUCLETRON - <http://www.nucletron.com>)

Plato System
Vaginal Cylinders
3D Head and Neck Treatments
Endobronchial
Implementation of MammoSite[®] - <http://www.mammosite.com>
Implementation of Rotte “Y” for endometrial applicator
Implementation of Tandem-Ovoids for cervical applicator

Stereotatic Radio surgery

Gamma-Knife (ELEKTA - <http://www.elekta.com>)
Model B
Model 4C (trunnions and APS System)
Perfexion upgrade

Special Software: RIT + VIDAR scan, Profiler, Mapcheck

Pinnacle³/ADAC Planning System
IMPAC Medical System <http://www.impac.com> (Oncology Management System)
MOSAIQ
ARGUS Software System <http://www.argusqa.com> (Quality Control Information Management)

CLINICAL AND RESEARCH INTEREST

- A. All aspects of Photodynamic Therapy
 - a. Optical Properties,
 - b. Non-Invasive measurements
- B. Ionizing Radiation Medical Physics in general
 - a. Brachytherapy: HDR, PDR, LDR (US, CT, MRI-Based)
 - b. Image Guided Therapy
 - c. EMR: Paperless and Remote access
 - d. *In-vivo* Dosimetry
 - e. LINAC based SBRT
- C. Proton Beam Therapy

AREAS OF CLINICAL EMPHASIS AND SPECIAL EXPERTISE

- 1. Photodynamic Therapy
 - Photofrin clinical and Trials
 - Pc 4 Trials – Skin recurrent and Dermatological,
 - ALA Trials – Brain Spectroscopy.
- 2. External Beam Radiation Therapy
 - Pinnacle-ADAC, CL2100, Primus, Elekta Synergy-S (IMRT/VMAT), IntraOp-Mobetron, Tomotherapy
- 3. Brachytherapy
 - Prostate Seed Implant, LDR Cervix Implant, SYED Nebblet Template, High DoseRate Therapy, Eye Plaque, Intravascular.
- 4. Special Procedures
 - Total Body Irradiation (TBI), Total Skin Electron Irradiation (TSEI), Intra-Operative Radiation Therapy, Gamma-Knife 4C/APS/Perflexion.
- 5. Shielding and Cancer Hospital design
 - LINAC and 4D-CT <http://uhhospitals.org/irelandcancer/tabid/2282/Default.aspx>

Valdir Carlos Colussi, PH.D., DABR, CRE

Associate Professor, Clinical Director Medical Physics
UH Case Medical / Seidman Cancer Center
Department Radiation Oncology
11100 Euclid Avenue. LL S665
Cleveland, Ohio 44106-6068
Phone: 216-286-3958
Fax: 216-286-3994
Pager Phone: 216-207-7243 #33186
Pager e-mail: 33186@pager.UHhospitals.org
e-mail: valdir.colussi@UHhospitals.org

☎ Past-President, AAPM Penn-Ohio Chapter ☎

For more details: <http://chapter.aapm.org/pennohio>