
John A. Viator, Ph.D.
240C Christopher S. Bond Life Sciences Center
1201 E Rollins Street
University of Missouri
Columbia, MO 65211-7310
(573)884-2862
email: viatorj@missouri.edu
<http://kolbe.missouri.edu>

Education

NIH Postdoctoral Fellow, Dermatology, Oregon Health & Science University, Portland, Oregon, 2003-2004

Postdoctoral Fellow, Biomedical Engineering, Beckman Laser Institute, University of California, Irvine, California, 2000-2003

Ph.D., Electrical Engineering, OGI School of Science and Engineering, Oregon Health & Science University, Hillsboro, Oregon, 2001

Dissertation title: “Characterization of photoacoustic sources in tissue using time domain measurements”, Dissertation advisor: Scott A. Prahl, Ph.D.

M.S. Applied Physics, Oregon Graduate Institute of Science and Technology, Hillsboro, Oregon, 1997

M.S. Mathematics, University of Oregon, Eugene, Oregon, 1993

B.S. Physics, University of Washington, Seattle, Washington, 1985

Research Appointments

1. Founder and Chief Scientific Officer, Viator Technologies Inc., (March 2011–present)
2. Associate Professor, Department of Biological Engineering, University of Missouri, Columbia, Missouri (September 2010–present)
3. Associate Professor, Department of Dermatology, University of Missouri, Columbia, Missouri (September 2010–present)
4. Founder and President, Verapulse, LLC (February 2008–present)
5. Assistant Professor, Department of Biological Engineering, University of Missouri, Columbia, Missouri (August 2004–present)
6. Assistant Professor, Department of Dermatology, University of Missouri, Columbia, Missouri (August 2004–present)
7. Faculty Investigator, Christopher S. Bond Life Sciences Center, University of Missouri, Columbia, Missouri (August 2004–present)
8. Senior Scientist, Blue Road Research, Gresham, Oregon (June 2003–July 2004)
9. Visiting Researcher, Beckman Laser Institute, University of California, Irvine (April 2003–August 2004)
10. Senior Research Associate, Department of Dermatology, Oregon Health and Science University (February 2003–August 2004)

-
11. Postdoctoral researcher, Beckman Laser Institute, University of California, Irvine (September 2000–January 2003)
 12. Project Officer, Office of Naval Research (LCDR, USNR) (August 1999–September 2004)
 13. Graduate research assistant, Oregon Medical Laser Center, Portland, OR (September 1995–September 2000)
 14. Engineer, Conix Research, Springfield, OR (June 1992–September 1995)
 15. Graduate research assistant, Department of Physics, University of Oregon, Eugene (February 1992–June 1993).

Military Experience

Lieutenant Commander, U.S. Naval Reserve (Retired) (August 1985–January 2007). Served on active duty aboard USS Dewey (DDG 45), a guided missile destroyer, as an engineering division officer and as a naval liaison officer for the Military Sealift Command during Operation Desert Shield. Reserve duties include battle watch officer for Commander, Submarine Forces Pacific, Commanding Officer of Inshore Boat Unit Thirteen, and project officer for the Office of Naval Research.

Professional Activities, Memberships, and Awards

1. Board member, Viator Technologies, Inc., 2011–present
2. Expert Review Board, Department of Biological Systems Engineering, University of Nebraska, Lincoln, Nebraska, July 2010
3. Editorial Board Member, *Lasers in Surgery and Medicine*, 2010–present
4. University of Missouri Outstanding Undergraduate Mentor Award, one of two in 2010
5. Session Chair, Basic Science, American Society for Laser Medicine and Surgery Annual Meeting, Phoenix, Arizona, April 2010
6. Committee member, University of Missouri Honor Awards, 2009–present
7. Board of Directors, MU Biodesign and Innovation Program, 2009–present
8. Committee member, University of Missouri Entrepreneur of the Year Award, 2009–present
9. Session Chair, International Bioelectrics Symposium, Columbia, Missouri 2009
10. MU School of Medicine Scientific Peer Review Committee member, 2008–present
11. MU Biological Engineering Outstanding Professor, Fall 2008, Fall 2010
12. MU Biodesign & Innovation Program Faculty, 2007–present
13. Wallace H. Coulter Fellow, 2006–2008
14. Session Chair, Life Sciences, Missouri Nanotechnology Alliance Conference, Columbia, MO, 2006
15. Advisory Council, Linn State Technical College, Linn, Missouri 2005–present
16. Topic Organizer, Thermal Therapy and Diagnostics Session, American Society of Mechanical Engineers, Summer Heat Transfer Conference, San Francisco, CA, 2005
17. Session Moderator, Basic Science, American Society for Laser Medicine and Surgery Annual Meeting, Dallas, TX, April 2004
18. Grand Awards Judge, International Science and Engineering Fair, Portland, OR, 2004

-
19. Co-chair, Image Guided Thermal Therapy Session, American Society of Mechanical Engineers, International Mechanical Engineering Congress and Exhibition, Anaheim, CA, 2004
 20. NIH Ruth L. Kirschstein National Research Service Awards, Individual Postdoctoral Fellow (F32)
 21. Co-chair, Thermal Therapy Session, American Society of Mechanical Engineers, International Mechanical Engineering Congress and Exhibition, Washington D.C., 2003
 22. SPIE, The International Society for Optical Engineering, Member, 2003–present
 23. American Society for Laser Medicine and Surgery, Fellow, 2003–present
 24. Sigma Xi, The Scientific Research Society, Member, 2002–present
 25. First Prize, Student Research Paper Contest, Electrical and Computer Engineering, Oregon Graduate Institute of Science and Technology, 2000
 26. Second Prize, Student Research Paper Contest, Electrical and Computer Engineering, Oregon Graduate Institute of Science and Technology, 1999

Referee and Review

1. Referee, *American Society of Mechanical Engineers Proceedings*
2. Referee, *the Analyst*
3. Referee, *Analytical Chemistry*
4. Referee, *Annals of Biomedical Engineering*
5. Referee, *Applied Optics*
6. Referee, *Biomedical Optics Express*
7. Referee, *Biophysical Journal*
8. Referee, *Cancer Nanotechnology*
9. Referee, *Cardiovascular Engineering and Technology*
10. Referee, *Chemical Reviews*
11. Referee, *Experimental Mechanics*
12. Referee, *Expert Opinion On Medical Diagnostics*
13. Referee, *Hospital Practice*
14. Referee, *Journal of Applied Physics*
15. Referee, *Journal of Biomechanical Engineering*
16. Referee, *Journal of Biomedical Nanotechnology*
17. Referee, *Journal of Biomedical Optics*
18. Referee, *Journal of Investigative Dermatology*
19. Referee, *Journal of Materials Chemistry*
20. Referee, *Journal of Optics A: Pure and Applied Optics*
21. Referee, *Journal of Physics: Condensed Matter*
22. Referee, *Journal of Physics D: Applied Physics*
23. Referee, *Lasers in Medical Science*
24. Referee, *Lasers in Surgery and Medicine*
25. Referee, *Microcirculation*
26. Referee, *Nanotechnology*

-
27. Referee, *Nature Nanotechnology*
 28. Referee, *Optical Engineering*
 29. Referee, *Optics and Lasers in Engineering*
 30. Referee, *Optics Communications*
 31. Referee, *Optics Express*
 32. Referee, *Optics Letters*
 33. Referee, *Pharmaceutical Research*
 34. Referee, *Photochemistry and Photobiology*
 35. Referee, *Physics in Medicine and Biology*
 36. Referee, *Physiological Measurement*
 37. Referee, *Pigment Cell & Melanoma Research*
 38. Referee, *Proceedings of the National Academy of Sciences*
 39. Referee, *Rheumatology*
 40. Ad Hoc Grant Reviewer, NIH ZRG1 SBIB-R 26 L, Fellowships: Bone and Skin, 2007
 41. Grant Reviewer, University of Missouri Department of Surgery Seed Grants, 2006–2008
 42. Grant Reviewer, University of Missouri Research Board, 2006–2009
 43. Ad Hoc Grant Reviewer, NIH ZRG1 MOSS-K, Rheumatology and Dermatology, 2007
 44. Grant Reviewer, Georgian National Science Foundation, 2006–2009
 45. Grant Reviewer, American Society for Laser Medicine and Surgery Grants, 2007–present
 46. Grant Reviewer, U.S. Civilian Research and Development Foundation, 2007
 47. Ad Hoc Grant Reviewer, NIH NIBIB ZEB1 OSR-B, Training and Career Awards, 2007
 48. Grant Reviewer, USDA Cooperative State Research, Education, and Extension Services, 2008
 49. Grant Reviewer, University of California Discovery Grants, 2009–present
 50. Grant Reviewer, University of Missouri Life Sciences Center Seed Grants, 2009
 51. Grant Reviewer, University of Missouri School of Medicine Clinical and Translational Science Seed Grants, 2008–present
 52. Grant Reviewer, Washington University Pilot and Feasibility Program, 2009
 53. Grant Reviewer, Florida Department of Health, 2010–present
 54. Grant Reviewer, NIH Biomedical Imaging Technology B, 2011–present
 55. Grant Reviewer, NIH SBIR Topic 293, ZCA1 SRLB-5(C2), Circulating Tumor Cells, 2011–present
 56. Grant Reviewer, NIH NCI Academic-Industrial Partnerships, 2011

Grants and Fellowships

1. **(PRE-APPLICATION)**, Biomedical Technology Research Center, **(Co-I)**, “Research and Development Toward Radioactive Nanotechnology for Cancer Detection, Imaging and Therapy”, **\$3,500,000**, 2011–2016
2. **(SUBMITTED)** NIH 1R21CA164958-01, **(PI)**, “Photoacoustic detection of circulating breast cancer cells”, **\$275,000** (DIRECT)
3. **(SUBMITTED)** Lloyd Charitable Trust, **(PI)**, “Isolation and detection of circulating melanoma cells in metastatic patients”, **\$195,107**
4. **(SUBMITTED)** NIH 1R01CA161367-01, **(PI)**, “Photoacoustic flowmetry and microfluidic cell capture for early cancer diagnosis”, **\$2,694,138**, 2011–2016
5. Access Business Group International, LLC, contract through Verapulse, LLC, **(PI)**, “Photoacoustic monitoring of phytochemical levels in human skin”, **\$20,347**, 2010–2011
6. Mizzou Advantage Faculty Fellows Grant, **(PI)**, “A 21st century program in cancer research: Targeting metastatic cancer cells to improve diagnosis and therapy”, **\$70,000**, 2010–2011
7. University of Missouri System Intellectual Property Fast Track Initiative Grant, **(PI)**, “Photoacoustic detection of circulating melanoma cells in blood”, **\$49,500**, 2009–2010
8. Missouri Technology Incentive Program Phase 0 SBIR, **(PI)**, **\$3800**, 2009
9. NIH 1R21CA139186-01, National Cancer Institute **(PI)**, “Photoacoustic detection of circulating melanoma cells in blood”, **\$351,996**, 2009–2011
10. Missouri Life Sciences Trust Fund Commercialization Grant, **(PI)**, “Photoacoustic detection of circulating melanoma cells in blood”, **\$407,789**, 2009–2012
11. Unrestricted Gift for John A. Viator Melanoma Research Fund **(PI)**, **\$36,000**
12. Dermatology Foundation Program Development Grant **(Co-I)**, “Determination of skin mechanical properties using digital imaging”, **\$10,000**, 2008–2009
13. University of Missouri Research Council, **(PI)**, “Improved flow chamber for photoacoustic detection of circulating melanoma cells”, **\$7100**, 2007–2008
14. University of Missouri, Department of Surgery Seed Grant **(Co-I)**, “Automated screening of sentinel lymph node biopsy for melanoma micro-metastasis using photoacoustic detection”, **\$39,200**, 2007–2008
15. American Society for Laser Medicine and Surgery Research Grant, **(PI)**, “Photoacoustic detection of circulating breast cancer cells”, **\$33,063**, 2007–2008
16. Wallace H. Coulter Foundation Early Career Award **(PI)**, “Photoacoustic detection of circulating melanoma cells”, **\$232,582**, 2006–2008
17. Bioprocessing and Biosensing Center, University of Missouri, Columbia **(PI)**, “Material characterization for reduction of contact dermatitis associated with prosthetic limbs”, **\$8,000**, 2006-2007
18. Bioprocessing and Biosensing Center, University of Missouri, Columbia **(PI)**, “Acoustic propagation in thermally damaged tissue”, **\$10,712**, 2006-2007
19. University of Missouri, Department of Surgery Seed Grant **(Co-I)**, “Photoacoustic detection of circulating melanoma cells”, **\$35,735**, 2005–2006
20. University of Missouri Research Board **(PI)**, “Sensors development for photoacoustic imaging of burns”, **\$29,200**, 2005–2006

-
21. Bioprocessing and Biosensing Center, University of Missouri, Columbia (**PI**), “Detection of melanoma using photoacoustic and nanosensing methods”, **\$11,300**, 2005-2006
 22. NIH Clinical Research Loan Repayment Program (**PI**), “Burn depth profiling using photoacoustic analysis”, **\$59,997**, 2003–2005, **Renewed** 2005–2007
 23. American Society for Laser Medicine and Surgery Research Grant (**PI**), “Photoacoustic depth profiling of epidermal melanin in human skin, *in vivo*”, **\$15,000**, 2003-2004
 24. NIH F32 GM066693–01, National Institute for General Medical Science, Individual National Research Service Award (**PI**), “Burn depth profiling using photoacoustic analysis”, **\$122,250**, 2003–2006 (terminated in 2004 for faculty position at University of Missouri)
 25. Faculty Career Development Award, University of California, Irvine (**PI**), **\$1000**, 2002-2003
 26. Graduate Research Fellowship, Electrical Engineering and Applied Physics, Oregon Graduate Institute of Science and Technology, 1995–1996
 27. Graduate Teaching Fellowship, Department of Physics, University of Oregon, 1992–1993
 28. Naval Reserve Officer Training Corps Scholarship, University of Washington, 1981-1985

Patents

1. B.S. Goldschmidt, A. Sudduth, P. Whiteside, **J.A. Viator**, “High energy total internal reflection photoacoustic spectroscopy”, US Patent Application No. 61/461,646, February 24, 2011
2. C.M. O’Brien, **J.A. Viator**, S. Holan, S. Gupta, S. Sengupta, J. Mosley, K. Rood, “Isolation of suspended pathological analytes using two phase flow after photoacoustic detection”, US Patent Application No. 61/381,809, September 10, 2010
3. **J.A. Viator**, R.M. Weight, P.S. Dale, P. Sutovsky, Continuation in Part, “Photoacoustic detection device and method”, U.S. Patent Application No. 60/819,941, October 1, 2008
4. **J.A. Viator**, P.S. Dale, D. McCormack, “Photoacoustic detection of analytes in solid tissue and detection system”, US 2010/0285518 A1, April 20, 2010
5. **J. A. Viator**, R. M. Weight, P. S. Dale, P. Sutovsky, “Photoacoustic detection device and method”, U.S. Patent Application No. 60/819,941, July 11, 2006
6. **J. A. Viator**, G. Paltauf, S. L. Jacques, J. S. Nelson, “Depth profiling of skin structure *in vivo* using photoacoustic analysis”, U.S. Patent No. 7322972, January 29, 2008

Invited Talks

1. Department of Mechanical Engineering, University of California, Riverside, “Detection of pathological analytes in blood using photoacoustic flowmetry”, Department Seminar Series, Riverside, California, February 4, 2011
2. World CTC Summit, Boston, Massachusetts, “Detection and isolation of circulating melanoma cells using photoacoustic flowmetry”, November 30, 2010
3. Department of Chemistry and Biochemistry Seminar, University of Missouri-St. Louis, Missouri, “Photoacoustic isolation of circulating tumor cells”, October 18, 2010
4. 18th International Conference on Advanced Laser Technologies, Egmond aan Zee, the Netherlands, “Isolation of circulating melanoma cells using photoacoustic flowmetry”, September 14, 2010

-
5. Dermatology Research Symposium, Stiefel Laboratories, Inc, Research Triangle Park, North Carolina, “Determination of skin mechanics using digital imaging”, October 24, 2009
 6. NIH Workshop, Circulating Tumor Cells: Detection, Diagnostics, Prognostics, and Treatment, Rockville, Maryland, “Detection of circulating tumor cells using photoacoustic flowmetry”, September 11, 2009
 7. 2nd Quadrennial Cutaneous S&T Imaging Conference, Rolla, Missouri, “Photoacoustic discrimination of vascular and pigmented lesions”, August 26, 2009
 8. 2nd Quadrennial Cutaneous S&T Imaging Conference, Rolla, Missouri, “Detection of circulating melanoma cells using photoacoustic flowmetry”, August 26, 2009
 9. 31st International Conference of the IEEE Engineering in Medicine and Biology, Minneapolis, Minnesota, “Nanoparticle enhanced detection of circulating tumor cells using photoacoustic flowmetry”, September 2–6, 2009
 10. 17th Symposium on Thermophysical Properties, Boulder, Colorado, “Detection of circulating cancer cells using photoacoustic flowmetry”, June 21, 2009
 11. University of Missouri Oncology Grand Rounds, Columbia, Missouri, “Cancer and Light: Diagnostic and therapeutic interactions”, April 21, 2009
 12. Department of Surgery, Truman Medical Center, Hospital Hill, Kansas City, Missouri, “Detection of circulating tumor cells in blood using laser induced ultrasound”, February 2009
 13. Science Cafe at the Capital in Jefferson City, Missouri, SCOPE Missouri, “Illuminating medicine: how light and lasers solve problems in human health”, February 4, 2009
 14. Beckman Laser Institute and Department of Biomedical Engineering, University of California, Irvine, “Detection of circulating tumor cells using focused photoacoustic flowmetry”, LAMMP Seminar Series, Irvine, California, November 6, 2008
 15. Sunrise Southwest Rotary Club, “Photoacoustics: Using light to hear the sound of cancer”, Columbia, Missouri, June 26, 2008
 16. Biomedical Engineering Society, Photoacoustic Imaging session, “Photoacoustic detection of breast cancer cells in human blood”, Los Angeles, California, September 28, 2007
 17. Rotary Club of Columbia, Missouri, “Photoacoustics: Using light to hear the sound of cancer”, Columbia, Missouri, August 1, 2007
 18. Saturday Morning Science, “Shining a light on medicine: How lasers are improving human health”, University of Missouri, Columbia, Missouri, April 14, 2007
 19. 2nd Workshop on Biomedical Instrumentation and Biological Materials, “A Primer on Photoacoustics in Medicine”, Institute of Physics, University of Guanajuato , Guanajuato, Mexico, March 26–28, 2007
 20. Big 12 Innovation and Capital Formation Conference, “Commercialization potential for photoacoustic detection of metastatic cancer cells”, Kansas City, Missouri, February 28–March 1, 2007
 21. St. Louis University BMES Conference, “Photoacoustic detection of metastatic cancer in human blood”, St. Louis, Missouri, February 24, 2007
 22. Kansas City University of Medicine and Biosciences, “Photoacoustics: The intersection of light and sound in biomedical diagnosis”, Kansas City, Missouri, September 22, 2006
 23. St. Louis University BMES/EMBS Conference, “Applications of Optics in Biomedical Engineering”, St. Louis, Missouri, February 18, 2006

-
24. Ultrafast Ultraintense Laser Material Interactions Workshop, “Monitoring burn injury using photoacoustic methods”, Columbia, Missouri, December 12, 2005
 25. Department of Biomedical Engineering, Texas A&M University, “Burn injury: modeling, diagnostics, and therapy”, Department Seminar, College Station, Texas, June 10, 2004
 26. Department of Biomedical Engineering, University of Rochester, “Photoacoustic imaging: The intersection of light and sound in biomedical diagnosis”, Department Seminar, Rochester, New York, April 28, 2004
 27. Department of Bioengineering, University of Illinois, Urbana-Champaign, “Photoacoustic imaging: The intersection of light and sound in biomedical diagnosis”, Department Seminar Series, Urbana-Champaign, Illinois, April 22, 2004
 28. Department of Biological Engineering, University of Missouri, Columbia, “Photoacoustic imaging: The intersection of light and sound in biomedical diagnosis”, Department Seminar Series, Columbia, Missouri, April 5, 2004
 29. Department of Mechanical Engineering, University of California, Riverside, “Photoacoustic imaging: The intersection of light and sound in biomedical diagnosis”, Department Seminar Series, Riverside, California, October 29, 2003
 30. Beckman Laser Institute, University of California, Irvine, “Localization of photoacoustic sources in tissue phantoms using outer product backprojection”, LAMMP Seminar Series, Irvine, California, January 18, 2001
 31. Office of Naval Research, International Field Office, London, “Photoacoustic depth profiling of human tissue using time domain measurements”, London, England, July 7, 2000

Bibliography

Refereed Journal Papers

1. S.K. Gupta, A. Daily, K. Campbell, L. Polo-Parada, **J.A. Viator**. “Photoacoustic detection of melanoma cells in blood samples using a mouse model”, (in preparation 2011)
2. B.S. Goldschmidt, A.S.M. Sudduth, **J.A. Viator**. “Stress Confined Total Internal Reflection Photoacoustic Spectroscopy” (in preparation 2011)
3. J. Custer, B. Beerntsen, C.M. O’Brien, **J.A. Viator**. “Photoacoustic detection and spectroscopic analysis of hemozoin in human mononuclear cells as an early indicator of malaria infection” (in preparation 2011)
4. C.M. O’Brien, A. Cook, B.S. Goldschmidt, **J.A. Viator**. “Detection and isolation of single melanoma cells using photoacoustic flowmetry and induction of two phase flow” (in preparation 2011)
5. **J.A. Viator**, C.M. O’Brien, S. Sengupta, B. Snow, B.S. Goldschmidt. “Photoacoustic flowmeter for detection and capture of pathological analytes in body fluids” (in preparation 2011)
6. S.H. Holan, R.J. Talbert, B.S. Goldschmidt, **J.A. Viator**. “Measurement of optical properties of thermally coagulated blood from 500–700 nm” (in preparation 2011)
7. E.B. Samson, B.S. Goldschmidt, A.S.M. Sudduth, P.J.D. Whiteside, **J.A. Viator**. “Evaluation of β -hematin as a substitute for hemozoin in photoacoustic detection of malaria infection” (in preparation 2011)

-
8. B.S. Goldschmidt, S. Gangopadya, X. Fan, **J.A. Viator**. “Photoacoustic detection of T47D cells using CdSe quantum dots introduced by a nanothermite shockwave technique” (in preparation 2011)
 9. **(INVITED REVIEW) J.A. Viator**, K. Rollins. “Photoacoustic detection and imaging of cancer using nanoparticles as optical contrast agents”, Recent Patents Nanomed. (accepted, 2011)
 10. D. McCormack, K. Bhattacharyya, R. Kannan, K. Katti, B. Goldschmidt, P.S. Dale, **J.A. Viator**. “Enhanced detection of single melanoma cells using gold nanoparticle enhancement”, Laser. Surg. Med., **43** 333–338 (2011)
 11. Nripen Chanda, Ravi Shukla, Ajit Zambre, Swapna Mekapothula, Rajesh R. Kulkarni, Kavita Katti, Kiran Bhattacharyya, Genevieve M. Fent, Stan W. Casteel, Evan J. Boote, **John A. Viator**, Anandhi Upendran, Raghuraman Kannan, Kattesh V. Katti. “An Effective Strategy for the Synthesis of Biocompatible Gold Nanoparticles Using Cinnamon Phytochemicals for Phantom CT Imaging and Photoacoustic Detection of Cancerous Cells”, Pharm. Res. **0724–8741** 1–13 (2010)
 12. F. G. Pérez-Gutiérrez, S. Camacho-López, R. Evans, G. Guillén, B.S. Goldschmidt, **J.A. Viator**, G. Aguilar. “Plasma membrane integrity and survival of melanoma cells after nanosecond laser pulses”, Ann. Biomed. Engineer. **50** 1–11 (2010)
 13. **(Invited) G. Gutiérrez-Juárez, S.K. Gupta, R.M. Weight, Luis Polo-Parada, C. Papageorgio, J.D. Bunch, J.A. Viator**. “Optical photoacoustic detection of circulating melanoma cells *in vitro*”, Int. J. Thermophys., **31** 784 (2010)
 14. J.D. Krehbiel, J. Lambros, **J.A. Viator**, N.R. Sottos. “Digital image correlation for improved detection of basal cell carcinoma”, Experimental Mechanics, **50** 813–824 (2010)
 15. **J.A. Viator**, S.K. Gupta, B.S. Goldschmidt, K. Bhattacharyya, R. Raghuraman, R. Shukla, P.S. Dale, E. Boote, K. Katti. “Detection of gold nanoparticle enhanced prostate cancer cells using photoacoustic flowmetry’ with optical reflectance’, J. Biomed. Nanotech., **6** 187–191 (2010)
 16. **(Highlights and Cover Photo) G. Gutiérrez-Juárez, S.K. Gupta, Luis Polo-Parada, P.S. Dale, C. Papageorgio, J.A. Viator**. “Photoacoustic detection of melanoma cells *in vitro* using an optical method”, Laser. Surg. Med., **42** 274–281 (2010)
 17. J. Swearingen, Scott H. Holan, M. Feldman, **J.A. Viator**. “Photoacoustic discrimination of vascular and pigmented lesions”, J. Biomed. Opt., **15** 016019–1–9 (2010)
 18. **(Invited) D. McCormack, K. Bhattacharyya, M. Al-Shaer, B. Goldschmidt, P.S. Dale, C. Henry, C. Papageorgio, J.A. Viator**. “Photoacoustic detection of melanoma micrometastasis in sentinel lymph nodes”, J. Biomech. Eng. - T. ASME, **131** 074519-1–5 (2009)
 19. J.D. Suter, Y. Sun, D.J. Howard, **J.A. Viator**, X. Fan. “PDMS embedded opto-fluidic microring resonator lasers”, Optics Express **16** 10248–10253 (2008)
 20. S.H. Holan, **J.A. Viator** “Automated wavelet denoising of photoacoustic signals for circulating melanoma cell detection and burn image reconstruction”, Phys. Med. Biol. **53** N227–N236 (2008)
 21. E.S. Blake, M.A. Haidekker, **J.A. Viator**, M.M. Hdeib, C.L. Lorenzen. “Using ultrasonic methods to determine cooking degree of doneness in beef steaks”, J. Muscle Foods **19** 111-124 (2008)

-
22. R.J. Talbert, Scott H. Holan, **J.A. Viator**. “Photoacoustic discrimination of viable and thermally coagulated blood using a two wavelength method for burn injury monitoring”, *Phys. Med. Biol.* **52** 1815–1829 (2007)
 23. R.M. Weight, P.S. Dale, A. Lisle, C. Caldwell, **J.A. Viator**. “Photoacoustic detection of metastatic melanoma cells in the human circulatory system”, *Opt. Lett.* **31** 2998–3000 (2006)
 24. D.S. Gareau, J. Langowski, V.M. Rossi, **J.A. Viator**, G. Merlino, M. Kulesz-Martin, S.L. Jacques. “Imaging melanoma in a murine model using reflectance-mode confocal scanning laser microscopy and polarized light imaging”, *J. Invest. Dermatol. Symp. Proc.* **10** 164–169 (2005)
 25. H. Yoshimura, **J.A. Viator**, S.L. Jacques. “Relationship between damage fraction and reflectance spectra of denaturing tissue”, *Laser. Surg. Med.* **37** 308–313 (2005)
 26. S. Kimel, B. Choi, L.O. Svaasand, J. Lofti, **J.A. Viator**, J.S. Nelson. “Influence of laser wavelength and pulse duration on gas bubble formation in blood filled glass capillaries”, *Laser. Surg. Med.* **36** 281–288 (2005)
 27. R. Zhang, W. Verkruysse, B. Choi, **J.A. Viator**, B. Jung, G. Aguilar, J.S. Nelson. “Retrieval of human skin optical properties from spectrophotometric measurements based on optimization by genetic algorithms”, *J. Biomed. Opt.* **10** 024030 (2005)
 28. B. Li, B. Majaron, **J.A. Viator**, T.E. Milner, Z. Chen, Y. Zhao, H. Ren, J.S. Nelson. “Accurate measurement of port wine stain depth in human skin *in vivo* using pulsed photothermal radiometry”, *J. Biomed. Opt.* **9** 961–966 (2004)
 29. B. Li, B. Majaron, **J.A. Viator**, T.E. Milner, J.S. Nelson. “Performance evaluation of pulsed photothermal profiling of port-wine stain in human skin”, *Rev. Sci. Instrum.* **75** 2048–2055 (2004)
 30. L.O. Svaasand, G. Aguilar, **J.A. Viator**, L.L. Randeberg, S. Kimel, J.S. Nelson. “Increasing dermal blood volume fraction reduces the threshold for laser-induced purpura: Implications for port wine stain laser treatment” *Laser. Surg. Med.* **34** 182–188 (2004)
 31. **J.A. Viator**, J. Komadina, L.O. Svaasand, G. Aguilar, B. Choi, J.S. Nelson. “A comparative study of photoacoustic and reflectance methods for determination of epidermal melanin content”, *J. Invest. Dermatol.* **122** 1432–1439 (2004)
 32. **J.A. Viator**, B. Choi, M. Ambrose, J.S. Spanier, J.S. Nelson. “*In vivo* port wine stain depth determination using a photoacoustic probe”, *Appl. Optics* **42** 3215–3224 (2003)
 33. **J.A. Viator**, B. Choi, G. Peavy, S. Kimel, J.S. Nelson. “Spectra from 2.5–15 μm of tissue phantom materials, optical clearing agents and *ex vivo* human skin: implications for depth profiling of human skin”, *Phys. Med. Biol.* **48** N15–N24 (2003)
 34. **J.A. Viator**, G. Au, G. Paltauf, S.L. Jacques, S.A. Prah, H. Ren, Z. Chen, J.S. Nelson. “Clinical testing of a photoacoustic probe for port wine stain depth determination”, *Laser. Surg. Med.* **30** 141–148 (2002)
 35. G. Paltauf, **J.A. Viator**, S.A. Prah, S.L. Jacques. “Iterative reconstruction algorithm for photoacoustic imaging”, *J. Acoust. Soc. Am.* **112** 1536–1544 (2002)
 36. **J.A. Viator**, F.M. Pistorius. “Investigating trends in acoustics research from 1970–1999”, *J. Acoust. Soc. Am.* **109** 1779–1783 (2001)
 37. **J.A. Viator**, S.A. Prah. “Laser thrombolysis using long pulse, frequency-doubled Nd:YAG lasers”, *Laser. Surg. Med.* **25** 379–388 (1999)
 38. **J.A. Viator**, S.L. Jacques, S.A. Prah. “Depth profiling of absorbing soft materials using photoacoustic methods”, *IEEE J. Select. Topics Quantum Electron.* **5** 989–996 (1999)

Refereed Conference Papers

1. **(Invited)** R.M. Weight, P.S. Dale, **J.A. Viator**. “Detection of circulating melanoma cells in human blood using photoacoustic flowmetry”, *IEEE Proc. Engineer. Med. and Biol.*, **1** 106–109 (2009)
2. G. Gutiérrez-Juárez, S.K. Gupta, R.M. Weight, Luis Polo-Parada, P.S. Dale, C. Papageorgio, **J.A. Viator**. “Detection of melanoma cells using photoacoustic flowmetry”, *Seventeenth Symposium on Thermophysical Properties*, , Boulder, CO, (2009)
3. J.D. Krehbiel, J. Lambros, **J.A. Viator**, N.R. Sottos. “Digital image correlation for improved detection of basal cell carcinoma”, *Society for Experimental Mechanics - 11th International Congress and Exhibition on Experimental and Applied Mechanics* **1** 428–432(2008)
4. G. Gutiérrez-Juárez, **J. A. Viator**. “Application of the Pulsed Photoacoustic Spectroscopy in Biomedicine”, *X Mexican Symposium on Medical Physics*, *AIP Conference Proceedings*. Eds. G. Herrera Corral, L. M. Montano, (2008)
5. G. Gutiérrez-Juárez, S. Gupta, **J. A. Viator**. “Photoacoustic detection of microbiological particles: The case of the metastatic circulating melanoma cells detection”, *X Mexican Symposium on Medical Physics*, *AIP Conference Proceedings*. Eds. G. Herrera Corral, L. M. Montano, (2008)
6. **J.A. Viator**, S.L. Jacques. “Depth limitations for photoacoustic imaging of burn injury, *in vivo*”, *ASME Proceedings, Summer Heat Transfer Conference*, San Francisco, CA (2005)
7. **J.A. Viator**, G. Aguilar, S.L. Jacques. “Photoacoustic depth profiling of human skin using a multi-sensor probe”, *ASME Proceedings International Mechanical Engineering Congress*, Anaheim, CA (2004)
8. H. Yoshimura, **J.A. Viator**, S.L. Jacques. “Spectral properties of reflected light from denaturing tissue”, *International Commission for Optics*, (2004)
9. **J.A. Viator**, G. Aguilar, J.S. Nelson. “Optimization of Cryogen Spray Cooling for Port Wine Stain Laser Therapy Using Photoacoustic Measurement of Epidermal Melanin”, *ASME Proceedings International Mechanical Engineering Congress*, (2003)

Non-refereed Conference Papers

1. C.M. O’Brien, B.S. Goldschmidt, **J.A. Viator**. “Isolation of circulating tumor cells using photoacoustic flowmetry and two phase flow” (accepted 2010)
2. B.S. Goldschmidt, , A.S.M. Sudduth, **J.A. Viator**. “Total internal reflection photoacoustic detection spectroscopy” (accepted 2010)
3. J. Custer, M. Kariuki, B. Beerntsen, **J.A. Viator**. “Photoacoustic detection of hemozoin in human blood as an early indicator of malaria infection”, *SPIE Proceedings*, (2010)
4. C. O’Brien, J. Mosely, **J.A. Viator**. “Detection and capture of single circulating melanoma cells using photoacoustic flowmetry”, *SPIE Proceedings*, (2010)
5. D. McCormack, K. Bhattacharyya, K. Katti, **J.A. Viator**. “Enhanced detection of circulating melanoma cells using gold nanoparticles as photoacoustic contrast agents”, *SPIE Proceedings*, (2010)
6. S.K. Gupta, G. Gutiérrez-Juárez, L. Polo-Parada, P.S. Dale, **J.A. Viator**. “Photoacoustic Detection of Exogenous Melanoma Cells in a Mouse Model”, *SPIE Proceedings*, (2009)

-
7. E.M. Spradling, G. Gutiérrez-Juárez, S.K. Gupta, P.S. Dale, **J.A. Viator**. “Detection of melanoma cells suspended in mononuclear cells and blood plasma using photoacoustic generation”, SPIE Proceedings, (2009)
 8. J.D. Suter, Y. Sun, D.J. Howard, **J.A. Viator**, X. Fan. “Integration of opto-fluidic microring resonator lasers for lab-on-a-chip development”, Proceedings of SPIE - The International Society for Optical Engineering 7056, (2008)
 9. **J.A. Viator**, P. Sutovsky, R.M. Weight. “Detection of dilute sperm samples using photoacoustic flowmetry”, SPIE Proceedings, (2008)
 10. T.S. Thomas, P.S. Dale, R.M. Weight, U. Atasoy, J. Magee, **J.A. Viator**., “Photoacoustic detection of breast cancer cells in human blood”, SPIE Proceedings, (2008)
 11. E. Spradling, R.J. Talbert, **J.A. Viator**. “Photoacoustic determination of absorption coefficient of coagulated blood”, SPIE Proceedings, (2008)
 12. R.M. Weight, P.S. Dale, G. Gutiérrez-Juárez, C. Caldwell, A. Lisle, **J.A. Viator**. “Photoacoustic detection of circulating melanoma cells, *in vitro*”, SPIE Proceedings, (2007)
 13. S.H. Holan, **J.A. Viator**. “Automated wavelet denoising of photoacoustic signals in a burn phantom”, SPIE Proceedings, (2007)
 14. R.J. Talbert, **J.A. Viator**. “Limitation of photoacoustic burn depth measurement using Monte Carlo analysis”, SPIE Proceedings, (2007)
 15. **J.A. Viator**, S. Kreger, E. Udd. “Modeling and experimental strain measurements on a non-homogeneous cylinder under transverse load”, SPIE Proceedings Smart Structures, **8453**, (2003)
 16. **J.A. Viator**, G. Aguilar, L.O. Svaasand, J.S. Nelson. “Investigation of epidermal melanin using photoacoustic analysis”, SPIE Proceedings Biomedical Optoacoustics IV, **4960**, (2003)
 17. J. Komadina, **J.A. Viator**, J.S. Nelson. “Acoustic piston and photoacoustic diffraction in planar tissue phantoms”, SPIE Proceedings Biomedical Optoacoustics IV, **4960**, (2003)
 18. G. Aguilar, B. Choi, **J.A. Viator**, D. Andersen, J.S. Nelson. “Experimental study of multiple-intermittent cryogen spurts and laser pulses for the treatment of port wine stain birthmarks”, SPIE Proceedings **4954**, (2003)
 19. **J.A. Viator**. “Opportunities in biomedical engineering for students of physics”, Proceedings of the National Society of Black Physicists 25th Annual Meeting , (2002)
 20. **J.A. Viator**, G. Au, B. Choi, J.S. Nelson. “Design limitations of a photoacoustics probe for port wine stain depth determination”, SPIE Proceedings Biomedical Optoacoustics III, **4618**, (2002)
 21. **J.A. Viator**, G. Paltauf, S.L. Jacques, S.A. Prahl. “Design and testing of an endoscopic photoacoustic probe for determining treatment depth after photodynamic therapy of esophageal cancer”, SPIE Proceedings Biomedical Optoacoustics II, **4256**, (2001)
 22. G. Paltauf, **J.A. Viator**, S.A. Prahl, S.L. Jacques. “Iterative reconstruction method for three-dimensional optoacoustic imaging”, SPIE Proceedings Biomedical Optoacoustics II, **4256**, (2001)
 23. G. Aguilar, B. Majaron, **J.A. Viator**, B. Basinger, E. Karapetian, L.O. Svaasand, E.J. Lavernia, J.S. Nelson. “Influence of spraying distance and post-cooling on cryogen spray cooling for dermatologic laser surgery”, SPIE Proceedings of Lasers in Surgery: Advanced Characterization, Therapeutics, and Systems XI **4244**, (2001)

-
24. **J.A. Viator**, K.W. Gregory. “OCT-guided TMR”, K.W. Gregory, editor, SPIE Proceedings of Diagnostic and Therapeutic Cardiovascular Interventions X, **3907F**, (2000)
 25. S.L. Jacques, **J.A. Viator**, G. Paltauf. “Optoacoustic imaging of tissue blanching during photodynamic therapy of esophageal cancer”, A.A. Oraevsky, editor, SPIE Proceedings of Biomedical Optoacoustics, **3916**, (2000)
 26. **J.A. Viator**, G. Paltauf, S.L. Jacques, S.A. Prahl. “Localization of spherical photoacoustic sources in acrylamide gels using time domain measurements”, A.A. Oraevsky, editor, SPIE Proceedings of Biomedical Optoacoustics, **3916**, (2000)
 27. **J.A. Viator**, S.L. Jacques, S.A. Prahl. “Photoacoustic imaging of gelatin phantoms using matched field processing”, S.L. Jacques, editor, SPIE Proceedings of Laser-Tissue Interaction X, **3601**, (1999)
 28. **J.A. Viator**, S.L. Jacques, S.A. Prahl. “Generating subsurface acoustic waves in indocyanine green stained aortic heterograft using a Q-switched laser”, S.L. Jacques, editor, SPIE Proceedings of Laser-Tissue Interaction IX, **3254**, (1998)
 29. **J.A. Viator**, S.A. Prahl. “Laser thrombolysis using a millisecond frequency doubled Nd-YAG laser”, S.L. Jacques, editor, SPIE Proceedings of Laser-Tissue Interaction IX, **3254**, (1998)
 30. B.S. Amurthur, **J.A. Viator**, and S.A. Prahl. “Acoustic cavitation events during microsecond irradiation of aqueous solutions”, In R.R. Anderson et al., editors, SPIE Proceedings of Diagnostic and Therapeutic Cardiovascular Interventions VII, **2970**, (1997)

Popular Articles

1. (Invited) **J.A. Viator**. “Photoacoustic detection of circulating melanoma cells in human blood”, SPIE Newsroom, (22 May 2009)

Book Chapters

1. R. Weight, **J.A. Viator**, “Detection of Circulating Tumor Cells by Photoacoustic flowmetry”, in *Methods in Molecular Biology*, Patrizia Paterlini-Bréchet, (Ed), Humana Press, Springer Publishing Group, (submitted 2010)
2. **J.A. Viator**, B.S. Goldschmidt, “Detection of circulating melanoma cells in human blood using photoacoustic flowmetry”, in *Biosensors and Biodetection Technologies for Cancer Detection, Diagnostics and Research*, A. Rasooly and K. Herold, (Eds.), CRC Press (submitted, 2010)
3. **J.A. Viator**, R.G.M. Kolkman, and W. Steenbergen. “Photoacoustic depth determination and imaging of port wine stain birthmarks” in *Photoacoustic imaging and spectroscopy*, L. Wang, (Ed.), CRC Press (2009)
4. **J.A. Viator**. “Biomedical Photoacoustics”, In *Encyclopedia of Agricultural, Food, and Biological Engineering*, Marcel Dekker, Inc. (2008)

Teaching

Graduate Student Committee

1. Matthew Cozad, Ph.D., in progress

-
2. Lisa Wayland Altschul, Ph.D., in progress
 3. Jasenka Memisevic, Ph.D., 2010
 4. Rafael Pérez Solano, M.S., 2010 (University of Guanajuato)
 5. Xiaofei Fan, Ph.D., June 2009
 6. Janaka Ranasinghesagara, Ph.D., November 2008
 7. Emily Pfautsch, M.S., May 2008
 8. Amanda White, M.S., December 2008
 9. Elizabeth Blake, M.S., August 2005

Graduate Students Supervised, Placement and Honors

1. Swarnasri Mandal, Ph.D., in progress
2. Paul Whiteside, M.S., in progress
3. Benjamin S. Goldschmidt, Ph.D., in progress
4. Jonathan Custer, M.S., in progress
5. Sagar Gupta, Ph.D., in progress
6. Emily Spradling, M.D., in progress
7. Kevin Rollins, M.E., December 2010, Patent Lawyer
8. Melvin J. Sims, M.E., December 18, 2009, Washington University School of Law, JD program
9. Lisa Huhman, M.S., July 25, 2008, Cerner Corporation
10. Robert J. Talbert, M.S., July 11, 2007, University of Cincinnati School of Medicine, MD program
11. Ryan M. Weight, M.S., July 28, 2006, Kansas City University of Medicine and Biosciences, DO program; Drexel University, Internal Medicine Residency

Undergraduate Researchers, Placement and Honors

1. Samantha Bradford (2010–present)
2. Joshua Hughey (2010–present)
3. Grace Lin (2010–present)
4. Chris Burford (2010–present)
5. Aaron Cook (2010–present)
6. Lindsay D'Amato (2010–present), UC Davis M.S. program, Peace Corp volunteer
7. Akia Parks (2010–present), MU EXPRESS research scholar, 2011 McNair Scholar
8. Chris Walter (2010–present), MU Discovery Scholar; MU Life Sciences Undergraduate Research Opportunities Program Scholarship
9. Daniel Grant (2010–present), Baylor College of Medicine REU
10. Kirby Campbell (2010–present), University of Wisconsin BME Ph.D. program
11. Adam Daily (2010–present), Partnership in International Research and Education Junior Summer Abroad Program, University of Vienna
12. Amanda Sudduth (2009–present), MU Life Sciences Undergraduate Research Opportunities Program Scholarship; NIH Summer Research Intern
13. Kyle Rood (2009–present) MU Biological Engineering M.S. program

-
14. Thiago D'Souza (2009–present)
 15. Rebekah Conley (2009–present) Hughes Research Fellowship, 2011–2012; MU Life Sciences Undergraduate Research Opportunities Program Scholarship
 16. Jeff Mosely (2009–present)
 17. Edward Benedict Samson (2010–present), Rice University BME Ph.D. program
 18. Joe Neal (2009–2010) - MU Discovery Scholar; NASA Undergraduate Student Research Program, 2010
 19. Christopher Sinks (2009–2010)
 20. Jonathan Custer (2009–2010), MU Biological Engineering, MS program
 21. Craig Eck (2009–2010), MU School of Medicine, MD program
 22. James Benson (2009), UMKC Dental School; United States Navy Dental Corps
 23. Christine O'Brien (2008–present), MU Life Sciences Undergraduate Research Opportunities Program Scholarship; Posters on the Hill presenter (1 of 60 chosen nationwide to present work in Washington DC); Vanderbilt University BME Ph.D. program; 2011 NSF Graduate Research Fellowship
 24. Kiran Bhattacharyya (2007–present), MU Biological Engineering, MS program
 25. Tyler Kunce (2007–2010), Cerner Corporation
 26. Katherine Brown (2007), MU Biological Engineering, MS program
 27. Jacqueline Wendl (2007), University of Minnesota, MS program
 28. Kathryn Faust (2007–2008), Ball State University, MS program
 29. James Bunch (2007–2009)
 30. Benjamin S. Goldschmidt (2007–2009), MU Biological Engineering, PhD program
 31. Dane K. Gibson (2007–2009)
 32. James Leopold (2007–2008)
 33. Emily Spradling (2006–2008), MU School of Medicine, MD program
 34. Kevin MacDonald (2006–2007), MU Discovery Scholar
 35. Devin McCormack (2006–present), MU Biological Engineering Junior of the Year, 2010; first author - J. Biomech. Engineer.; first author - Lasers in Surgery and Medicine; Vanderbilt University BME Ph.D. program
 36. Mike Delger (2006), Washington University, MS-MBA program
 37. Ryan M. Weight (2005), MU Biological Engineering, MS program

High School Researchers, Placement and Honors

1. Nikhilesh Sharma (2010–present)
2. Sidhant Misra (2008–2010), Intel Talent Search Semi-finalist; Junior Science and Humanities Symposium Semi-finalist; Harvard University, BS program
3. Kelli Noel (2007–2008), George Washington University, BS program
4. Devin McCormack (2006), MU Biological Engineering, BS program
5. Matthew Coudron (2006), full scholarship and Honors Program, University of Minnesota, BS program

Courses Developed and Taught

1. BIO EN 2080, Introduction to Programming for Engineers, Fall 2006–2010, Department of Biological Engineering, University of Missouri, Columbia. Developed and taught basics of Matlab programming and numerical methods to underclassmen matriculated in Biological Engineering.
2. BIO EN 8088, Advanced Seminar in Biological Engineering, Fall 2007, Department of Biological Engineering, University of Missouri, Columbia. Taught practical techniques in reading and reviewing scientific papers and grant proposals to graduate students in Biological Engineering.
3. BIO EN 4980, Senior Engineering Capstone Mentor, Fall 2005–2010, Department of Biological Engineering, University of Missouri, Columbia. Mentored groups of senior engineering students on design of prototype medical devices.
4. BIO EN 8180, Numerical Methods for Engineering Research, Winter 200–2010, Department of Biological Engineering, University of Missouri, Columbia. Developed and taught computational methods to graduate students. Topics included numerical linear algebra, ordinary and partial differential equations, Fourier methods, and wavelets.
5. BIO EN 4080/7080, Engineering Computation, Winter 2006–2010 Department of Biological Engineering, University of Missouri, Columbia. Developed and taught Matlab programming for modeling of biological systems.
6. BIO EN 4001/7001, Statistical Methods in Bioengineering, Fall 2005, Department of Biological Engineering, University of Missouri, Columbia. Developed and taught statistical methods, including hypothesis testing, regression, and error propagation in the context of bioengineering.
7. BIO EN 8087, Seminar in Biological Engineering, Winter 2005, Department of Biological Engineering, University of Missouri, Columbia. Taught practical techniques in reading, writing, reviewing, and presenting scientific papers to graduate students in Biological Engineering and Food Science.
8. BIO EN 4085, Problems in Biological Engineering: Introduction to Scientific Computation, Winter 2005, Department of Biological Engineering, University of Missouri, Columbia. Developed and taught applied mathematics and computational methods in bioengineering for independent study.
9. BIO EN 4085, Problems in Biological Engineering: Statistical Methods in Bioengineering, Winter 2005, Department of Biological Engineering, University of Missouri, Columbia. Developed and taught statistical methods in bioengineering for independent study.
10. Guest Lecturer, CEMS 124, *Transport Phenomena in Living Systems*, Winter 2002, Department of Chemical Engineering and Material Sciences, University of California, Irvine. Taught theory and applications of biomedical photoacoustics.
11. Guest Lecturer, BME 136, *Photomedicine*, Department of Biomedical Engineering, University of California, Irvine. Taught theory and applications of biomedical photoacoustics.