ADAM DE LA ZERDA

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EDUCATION

Stanford University Stanford, CA
PhD, Electrical Engineering *Sep 2007 – Jun 2011*
GPA: 4.00 / 4.00
Advisor: Sanjiv Sam Gambhir, MD, PhD (Radiology, Bioengineering)
Co-Advisors: Shan X. Wang, PhD (Electrical Engineering, Materials Science and Eng.)
James S. Harris, PhD (Electrical Engineering)

Stanford University Stanford, CA
MSc, Electrical Engineering *Sep 2005 – Jun 2007*
GPA: 3.95 / 4.00

Technion – Israel Institute of Technology Haifa, Israel
BSc, Computer Engineering *Sep 2002 – Jun 2005*
Majoring in Computer Science, Electrical Engineering and Physics
GPA: 92.5 / 100, ***Summa Cum Laude***

ACADEMIC APPOINTMENTS

Stanford University, Department of Structural Biology (primary) Stanford, CA
Department of Electrical Engineering (by courtesy)
Assistant Professor *Aug 2012 – present*

University of California, Berkeley, Department of Chemistry Berkeley, CA
Postdoctoral Fellowship *Feb 2011 – Jul 2012*
Mentor: Carolyn R. Bertozzi, PhD (Chemistry, Howard Hughes Medical Institute)

HONORS / AWARDS

- *Investigator*, Chan-Zuckerberg Biohub *2017*
- *Speaker*, TEDxStanford *2016*
- *Pew-Stewart Scholar for Cancer Research*, The Pew Charitable Trusts and The Stewart Trust *2015*
- *10 Outstanding Medical School Professors Under 40*, Career&Education.com *2014*
- *AFOSR Young Investigator Research Program Award*, US Air Force *2014*
- *Forbes 30 Under 30 in Science and Healthcare*, Forbes Magazine *2014*
- *Donald E. and Delia B. Baxter Foundation Faculty Scholar Program Award* *2013*
- *Forbes 30 Under 30 in Science and Healthcare*, Forbes Magazine *2012*
- *Dale F. Frey Award*, Damon Runyon Cancer Research Foundation *2012*
- *NIH Director's Early Independence Award (DP5)*, NIH *2012*
- *Era of Hope Distinguished Predoctoral Poster Award*, Breast Cancer Research Program, DoD *2011*
- *Jane Coffin Childs Memorial Fund Postdoctoral Fellowship* (offered but not taken) *2011*
- *Damon Runyon Postdoctoral Fellowship Award*, Damon Runyon Cancer Research Foundation *2011*
- *Bio-X Travel Award*, Bio-X Program, Stanford University *2010*
- *Best Poster Presentation Award*, Photoacoustic Imaging section, SPIE Photonics West 2009 *2009*
- *Young Investigator Award*, World Molecular Imaging Congress 2008 *2008*
- *Bio-X Travel Award*, Bio-X Program, Stanford University *2008*
- *Student Travel Award*, World Molecular Imaging Congress 2008 *2008*
- *Bio-X Graduate Student Fellowship*, Bio-X Program, Stanford University *2008*
- *Predoctoral Traineeship Award*, Department of Defense (DoD), Breast Cancer Research Program *2008*
- *1st place*, The Bay-Area Entrepreneurship Contest *2007*
- *Technion President Excellency Award*, Technion – Israel Institute of Technology *2006*

- *Fellowship Award*, School of Engineering, Stanford University *2005*
- *Technion President Excellency Award*, Technion – Israel Institute of Technology *2005*
- *Amdocs Excellency Scholarship*, Amdocs Ltd. *2005*
- *Technion President Excellency Award*, Technion – Israel Institute of Technology *2004*
- *Check Point Excellency Scholarship*, Check Point Ltd. *2004*
- *Technion President Excellency Award*, Technion – Israel Institute of Technology *2003*

PROFESSIONAL EXPERIENCE

Click Diagnostics, Inc. San Jose, CA
Founder *2012 – present*
- Company in stealth mode

OcuBell, Inc. Newark, CA
Co-Founder *2009 – 2011*
- A company aiming to commercialize photoacoustic imaging in ophthalmic markets

Intel Corporation Haifa, Israel
Researcher, Microprocessor Research Laboratory *2003 – 2005*

TEACHING EXPERIENCE

Stanford University Stanford, CA
*Instructor, "*Biochips and Medical Imaging" (EE-225, MSE-382, SBIO-225) *Winter 2010 – present*
- Initiated and co-teaching this class with Prof. Shan X. Wang
- Ranked 4.86 (out of 5.0; Stanford School of Engineering average is ~4.15), in class of ~100 students

Stanford University Stanford, CA
Teaching Assistant, "Computer Networks" (EE-248) *Fall 2006-07*
- Gave weekly tutorials to ~50 local and remote students (tutorials were video-recoded and broadcasted).

Technion – Israel Institute of Technology Haifa, Israel
Teaching Assistant, "Computer Organization and Programming" (CS 234118) *Winter 2004-05*
- Gave weekly tutorials to ~50 students, office hours, wrote and checked exams and homework assignments

Private Tutor Haifa, Israel
- Gave private lessons to students in math, physics and computers *1997 - 2004*

JOURNAL PAPERS

1. Derek Yecies, Orly Liba, Elliott D. SoRelle, Rebecca Dutta, Edwin Yuan, Hannes Vogel, Gerald A. Grant, **Adam de la Zerda**, "Speckle modulation enables high-resolution wide-field human brain tumor margin detection and in vivo murine neuroimaging", (In press – ***Scientific Reports***)
2. Elliott SoRelle, Derek Yecies, Orly Liba, Chris F Bennet, Claus-Moritz Graef, Rebecca Dutta, Siddartha S Mitra, Lydia-Marie Joubert, Samuel H Cheshier, Gerald Grant, **Adam de la Zerda**, "Deep-Tissue Tracking of Tumor-Associated Myeloid Cells *in vivo* through OCT with Integrated Plasmon-Enhanced Spectral Labeling and Speckle Suppression", (In final review –***ACS Nano***)
3. Yonatan Winetraub, Chris Wu, Steven Chu, **Adam de la Zerda**, "Upper limit for angular compounding speckle reduction", ***Applied Physics Letters*** 114, 211101 (2019)
4. Rebecca Dutta, Orly Liba, Elliott D. SoRelle, Yonatan Winetraub, Vishnu C. Ramani, Stefanie S. Jeffrey, George W. Sledge, **Adam de la Zerda**, "Real-time detection of circulating tumor cells in living animals using functionalized large gold nanorods", ***Nano Letters*** 19 (4), 2334-2342 (2019)
5. Yilei Li, Yonatan Winetraub, Orly Liba, **Adam de la Zerda,** Steven Chu, "Optimization of the trade-off between speckle reduction and axial resolution in frequency compounding", ***IEEE TMI Xplore*** 38 (1), 107-112 (2019)

6. Peng Si, Edwin Yuan, Orly Liba, Siavash Yousefi, Yonatan Winetraub, Elliott SoRelle, Derek Yecies, **Adam de la Zerda**, "Gold Nanoprisms as Optical Coherence Tomography Contrast Agents in the Second Near Infrared Window for Enhanced Angiography in Live Animals", ***ACS Nano*** 12 (12), 11986-11994 (2018)
7. Derek Yecies, Orly Liba, **Adam de la Zerda**, Gerald Grant, "Intraoperative imaging modalities and the potential role of speckle modulating optical coherence tomography", ***Clinical Neurosurgery*** 65, 74-77 (2018)
8. Peng Si, Debasish Sen, Rebecca Dutta, Siavash Yousefi, Roopa Dalal, Yonatan Winetraub, Orly Liba, **Adam de la Zerda**, "*In Vivo* Molecular Optical Coherence Tomography of Lymphatic Vessel Endothelial Hyaluronan Receptors", ***Scientific Reports*** 7, 1086 (2017)
9. Jos L Campbell*, Elliott D SoRelle*, Ohad Ilovich, Orly Liba, Michelle L James, Zhen Qiu, Valerie Perez, Carmel T Chan, **Adam de la Zerda**, Cristina Zavaleta, "Multimodal assessment of SERS nanoparticle biodistribution post ingestion reveals new potential for clinical translation of Raman imaging", ***Biomaterials*** 135, 42-52 (2017)
10. Orly Liba, **Adam de la Zerda**, "Photoacoustic tomography: Breathtaking whole-body imaging", ***Nature Biomedical Engineering*** **1**, 0075 (2017)
11. Orly Liba, Matthew D Lew, Elliott D SoRelle, Rebecca Dutta, Debasish Sen, Darius M Moshfeghi, Steven Chu, **Adam de la Zerda**, "Speckle-modulating optical coherence tomography in living mice and humans", ***Nature Communications*** 8, 15845 (2017)
12. Elliott SoRelle, Orly Liba, Roopa Dalal, **Adam de la Zerda**, "A hyperspectral method to assay the microphysiological fates of nanomaterials in histological samples", ***eLife*** 2016;5:e16352 (2016)
13. Debasish Sen, Elliott SoRelle, Orly Liba, Roopa Dalal, **Adam de la Zerda** "High-resolution Contrast-enhanced Optical Coherence Tomography in mice retinae", ***Journal of Biomedical Optics*** 21(6), 066002 (2016)
14. Orly Liba, Elliott SoRelle, Debasish Sen, **Adam de la Zerda**, "Contrast-enhanced optical coherence tomography with picomolar sensitivity for functional in vivo imaging" ***Scientific Reports*** 6, 23337 (2016)
    Paper featured in: *Paper of the week – OCT News, Futurity.org,*
15. Yonatan Winetraub, Elliott D SoRelle, Orly Liba, **Adam de la Zerda**, "Quantitative contrast-enhanced optical coherence tomography", ***Applied Physics Letters*** 2, 023702 (2016)
16. Elliott D SoRelle, Orly Liba, Zeshan Hussain, Milan Gambhir, **Adam de la Zerda**, "Biofuctionalization of Large Gold Nanorod Realizes Ultrahigh-Sensitivity Optical Imaging Agents", ***Langmuir*** 45, 12339-12347 (2015)
17. Paul J Kempen, Moritz F Kircher, **Adam de la Zerda,** Christina Zavaleta, Jesse V Jokerst, Ingo K Mellinghoff, Sanjiv S Gambhir, Robert Sinclair, "A correlative optical microscopy and scanning electron microscopy approach to locating nanoparticles in brain tumors." ***Micron***, 68, 70-76 (2015)
18. **Adam de la Zerda,** Shradha Prabhulkar, Victor L Perez, Marco Ruggeri, Amit S Paranjape, Frezghi Habte, Sanjiv S Gambhir, Richard M Awdeh, "Optical coherence contrast imaging using gold nanorods in living mice eyes.", ***Clinical & Experimental Ophthalmology***, Epub, (2015)
19. Shradha Prabhulkar, **Adam de la Zerda**, Amit Paranjape, Richard M. Awdeh, "Single Step Nanoplasmonic Immunoassay for the Measurement of Protein Biomarkers", ***Biosensors***, 3, 77-88 (2013)
20. Natesh Parashurama, Thomas D. O'Sullivan, **Adam de la Zerda**, Pascale El Kalassi, Seongchae Cho, Hongguang Liu, Robert Teed, Hart Levy, Jarret Rosenberg, Zhen Cheng, Ofer Levi, James S Harris, Sanjiv Sam Gambhir, "Continuous sensing of tumor-targeted molecular probes with a vertical cavity surface emitting laser-based biosensor", ***Journal of Biomedical Optics***, 17, 117004 (2012)
21. **Adam de la Zerda**, Sunil Bodapati, Robert Teed, Salomon May, Scott M. Tabakman, Zhuang Liu, Butrus T. Khuri-Yakub, Xiaoyuan Chen, Hongjie Dai, Sanjiv S. Gambhir, "Family of Enhanced Photoacoustic Imaging Agents for High Sensitivity and Multiplexing Studies in Living Mice", ***ACS Nano***, 6, 4694-4701 (2012)
22. Moritz F. Kircher*, **Adam de la Zerda***, Jesse Jokerst, Cristina Zavaleta, Paul Kempen, Erik Mittra, Kenneth Pitter, Ruimin Huang, Carl Campos, Frezghi Habte, Robert Sinclair, Cameron W Brennan, Ingo K. Mellinghoff, Eric C. Holland, Sanjiv S. Gambhir, "A brain tumor molecular imaging strategy using a new triple-modality MRI-photoacoustic-Raman nanoparticle", ***Nature Medicine***, 18, 829-834 (2012) (*equal contribution)
    Commentary: Katie Kingwell, "Neuro-oncology: Nanoparticle imaging could guide brain tumour surgery", *Nature Reviews Neurology* 8, 296 (2012)

23. **Adam de la Zerda**, Jin-Woo Kim, Ekaterina I. Galanzha, Sanjiv S. Gambhir, Vladimir P. Zharov, "Advanced Contrast Nanoagents for Photoacoustic Molecular Imaging, Cytometry, Blood Test and Photothermal Theranostics", (*peer-reviewed invited review*) ***Contrast Media & Molecular Imaging***, 6, 346-369 (2011)
24. **Adam de la Zerda**[*], Zhuang Liu[*], Sunil Bodapati, Robert Teed, Srikant Vaithilingam, Butrus T. Khuri-Yakub, Xiaoyuan Chen, Hongjie Dai, Sanjiv S. Gambhir, "Ultrahigh Sensitivity Carbon Nanotube Agents for Photoacoustic Molecular Imaging in Living Mice", ***Nano Letters***, 10, 2168-72 (2010) (*equal contribution)
25. **Adam de la Zerda**, Yannis Paulus, Robert Teed, Sunil Bodapati, Yosh Dollberg, Butrus Khuri-Yakub, Mark Blumenkranz, Darius Moshfeghi, Sanjiv S. Gambhir, "Photoacoustic Ocular Imaging", ***Optics Letters***, 35, 270-2 (2010)
26. **Adam de la Zerda**, Sunil Bodapati, Robert Teed, Meike Schipper, Shay Keren, Bryan Smith, Johnny S.T. Ng, Sanjiv S. Gambhir, "A Comparison between Time Domain and Spectral Imaging Systems for Imaging Quantum Dots in Small Living Animals", ***Molecular Imaging and Biology***, 12, 500-8 (2010)
27. **Adam de la Zerda**, Cristina Zavaleta, Shay Keren, Srikant Vaithilingam, Sunil Bodapati, Zhuang Liu, Jelena Levi, Te-Jen Ma, Omer Oralkan, Zhen Cheng, Xiaoyuan Chen, Hongjie Dai, Butrus T. Khuri-Yakub, Sanjiv S. Gambhir, "Photoacoustic Molecular Imaging in Living Mice Utilizing Targeted Carbon Nanotubes", ***Nature Nanotechnology***, 3, 557-62 (2008)

    Paper featured in: *Washington Post, US News, Forbes, USA Today, KCBS Radio, KGO Radio, KQED Radio, NCI Alliance for Nanotechnology in Cancer Newspaper, WECT TV6, Yahoo! News, Imperial Valley News, Wave 3, WGEM News* and more.
28. Cristina Zavaleta, **Adam de la Zerda**, Zhuang Liu, Shay Keren, Zhen Cheng, Meike Schipper, Xiaoyuan Chen, Hongjie Dai, Sanjiv S. Gambhir, "Non-invasive Raman Spectroscopy in Living Mice for Evaluation of Tumor Targeting with Carbon Nanotubes", ***Nano Letters***, 8, 2800-5 (2008)
29. Shay Keren, Cristina Zavaleta, Zhen Cheng, **Adam de la Zerda**, Olivier Gheysens, Sanjiv S. Gambhir, "Noninvasive molecular imaging of small living subjects using Raman spectroscopy", ***Proceedings of the National Academy of Sciences (USA)*** 105, 5844-5849 (2008)

    Paper featured in: *San Francisco Chronicle, NCI Alliance for Nanotechnology in Cancer, R&D technologies & strategies for research & development, Science Daily, Photonics.com* and more.
    Awarded the: "*One of the 30 most-read papers online in PNAS during April 2008*".
30. Srikant Vaithilingam, Te-Jen Ma, Yukio Furukawa, **Adam de la Zerda**, Omer Oralkan, Shay Keren, Sanjiv S. Gambhir and Butrus T. Khuri-Yakub, "A Coaxial Scanning Acoustic and Photoacoustic Microscope", ***Proceedings of IEEE Ultrasonics, Ferroelectrics, and Frequency Control Society***, 2413-2416 (2007)
31. **Adam de la Zerda**, Benjamin Armbruster, Lei Xing, "Formulating Adaptive Radiation Therapy Treatment Planning into a Closed-Loop Control Framework", ***Physics in Medicine and Biology*** 52(14), (2007)
32. **Adam de la Zerda**, Sanjiv S. Gambhir, "Keeping Tabs on Nanocarriers", ***Nature Nanotechnology*** 2(12) (2007)

CONFERENCE PAPERS (partial list)

1. Peng Si, Edwin Yuan, Orly Liba, Siavash Yousefi, Yonatan Winetraub, Elliott SoRelle, Derek Yecies, **Adam de la Zerda**, "Gold Nanoprisms as Optical Coherence Tomography Contrast Agents in the Second Near Infrared Window for Enhanced Angiography in Live Animals", *SPIE Photonics West* (2019)
2. Yonatan Winetraub, Chris Wu, Steven Chu, **Adam de la Zerda**, "Upper limit for angular compounding speckle reduction", *SPIE Photonics West* (2019)
3. Peng Si, Edwin Yuan, Orly Liba, Yonatan Winetraub, Siavash Yousefi, Elliott D. SoRelle, Derek Yecies, Rebecca Dutta, **Adam de la Zerda**, "Gold nanoprisms as optical coherence tomography contrast agents for enhanced imaging of tumor microvasculatures in vivo", *Materials Research Society (MRS) Fall Meeting & Exhibit* (2018)
4. Peng Si, Edwin Yuan, Orly Liba, Yonatan Winetraub, Siavash Yousefi, Elliott D. SoRelle, Derek Yecies, Rebecca Dutta, **Adam de la Zerda**, "Gold nanoprisms as optical coherence tomography contrast agents for enhanced imaging of tumor microvasculatures in vivo", *The World Molecular Imaging Congress* (2018)

5. Derek Yecies[1,2], Orly Liba[2,3,] Elliott D. SoRelle[2,4], Rebecca Dutta[2], Gerald Grant[1], **Adam de la Zerda[2,3,4]**, "SM-OCT for Brain Tumor Margin Detection and *in vivo* Neuroimaging", *Pew Annual Meeting* (2018)
6. Orly Liba, Matthew D. Lew, Elliott D. SoRelle, Rebecca Dutta, Debasish Sen, Darius M. Moshfeghi, Steven Chu, **Adam de la Zerda**, "Speckle-modulation for speckle reduction in optical coherence tomography", *SPIE Photonics West* (2018)
7. Derek Yecies, Orly Liba, Elliott D SoRelle, Rebecca Dutta, Gerald Grant, Adam de la Zerda, "SM-OCT for Brain Tumor Margin Detection and in vivo Neuroimaging", *NIH High-risk, High-Reward Symposium* (2018)
8. Peng Si, Debasish Sen, Rebecca Dutta, Siavash Yousefi, Roopa Dalal, Yonatan Winetraub, Orly Liba, **Adam de la Zerda**, "Optical Coherence Tomography of Lymphatic Vessel Endothelial Hyaluronan Receptors *in vivo*", *SPIE Photonics West* (2018)
9. Derek Yecies, Orly Liba, Elliott SoRelle, Rebecca Dutta, Gerald Grant, **Adam de la Zerda**, "Speckle-modulating Optical Coherence Tomography for Brain Tumor Margin Detection and *in vivo* Neuroimaging", *AANS/CNS Section on Pediatric Neurosurgery Annual Meeting* (2017)
10. Derek Yecies, Orly Liba, Elliott SoRelle, Rebecca Dutta, Gerald Grant, **Adam de la Zerda**, "Speckle-Free and Large Gold Nanorod Enhanced Optical Coherence Tomography for Brain Tumor Margin Detection", *CNS Annual Meeting* (2017)
11. Derek Yecies, Orly Liba, Elliott SoRelle, Rebecca Dutta, Gerald Grant, **Adam de la Zerda**, "Speckle-Free and Large Gold Nanorod Enhanced Optical Coherence Tomography for Brain Tumor Margin Detection", *Stanford Neuroscience Forum* (2017)
12. Orly Liba, Elliot SoRelle, Debasish Sen, **Adam de la Zerda**, "High sensitivity contrast enhanced optical coherence tomography for functional in vivo imaging", *SPIE Photonics West* (2017)
13. Elliott SoRelle, Orly Liba, Debasish Sen, **Adam de la Zerda**, "Spectral contrast-enhanced optical coherence tomography for improved detection of tumor microvascular and functional imaging of lymphatic drainage", *SPIE Photonics West* (2017)
14. Yonatan Winetraub, Elliott SoRelle, Orly Liba, **Adam de la Zerda**, "A model for quantifying contrast enhancement in optical coherence tomography (OCT)", *SPIE Photonics West* (2017)
15. Elliott SoRelle, Orly Liba, Jos Campbell, Roopa Dalal, Christina Zavaleta, **Adam de la Zerda**, "Machine learning-assisted hyperspectral analysis of plasmonic contrast agent microbiodistribution with single-particle sensitivity and sub-cellular resolution", *SPIE Photonics West* (2017)
16. Peng Si, Rebecca Dutta, Debasish Sen, Siavash Yousefi, Roopa Dalal, Yonatan Winetraub, Orly Liba, **Adam de la Zerda**, "In Vivo Imaging of Molecular Dynamics of Lymphatic Vessel Endothelial Hyaluronan Receptors during Inflammation with Optical Coherence Tomography", *World Molecular Imaging Congress (WMIC)* (2017)
17. Orly Liba, Elliott SoRelle, **Adam de la Zerda**, "Characterizing Nanoparticle Microdistribution Using Adaptive Dark-Field Hyperspectral Microscopy", World Molecular Imaging Congress *(WMIC)* (2016)
18. Orly Liba, Elliott SoRelle, **Adam de la Zerda**, "Spectral Analysis for Molecular Imaging with Optical Coherence Tomography (OCT) *in vivo*", *World Molecular Imaging Congress (WMIC)* (2016)
19. Elliott SoRelle, Orly Liba, Debasish Sen, **Adam de la Zerda**, "Contrast-enhanced optical coherence tomography with picomolar sensitivity enables functional 3D imaging of deep tumor microvasculature and lymphatic drainage in live animal models", *World Molecular Imaging Congress (WMIC)* (2016)
20. Yonatan Winetraub, Elliott SoRelle, Orly Liba, **Adam de la Zerda**, "A Model for Quantifying Contrast Enhancement in Coherence-Based Imaging Modalities", *Canary Foundation Summit* (2016)
21. Orly Liba, Elliott SoRelle, **Adam de la Zerda**, "Characterizing Nanoparticle Microbiodistribution Using Adaptive Dark-Field Hyperspectral Microscopy", *Canary Foundation Summit* (2016)
22. Orly Liba, Elliott SoRelle, Debasish Sen, **Adam de la Zerda**, "Contrast-Enhanced Optical Coherence Tomography with Picomolar Sensitivity for Functional *in vivo* Imaging", *Canary Foundation Summit* (2016)
23. Peng Si, Debasish Sen, Rebecca Dutta, Siavash Yousefi, Yonatan Winetraub, Orly Liba, **Adam de la Zerda**, "Molecular Optical Coherence Tomography of Lymphatic Vessel Biomarkers *in vivo*", *Canary Foundation Summit* (2016)
24. Orly Liba, Elliott SoRelle, Debasish Sen, **Adam de la Zerda**, "MOZART: High-resolution optical molecular imaging system for medical and biological applications", *Stanford Photonics Research Center Retreat* (2016)

25. **Adam de la Zerda**, "MOZART: High-resolution optical molecular imaging system for medical and functional biological applications", *NIH High-Risk, High-Reward Research Symposium* (2015)
26. Orly Liba, Elliott SoRelle, Peng Si, Bryan Knysh, **Adam de la Zerda**, "MOZART: High-resolution optical molecular imaging system for medical and biological application", *Molecular Imaging Program at Stanford (MIPS) Retreat* (2015)
27. Orly Liba, Elliott SoRelle, **Adam de la Zerda**, "Contrast-Enhanced Optical Coherence Tomography (OCT) With Picomolar Sensitivity Functional Imaging in Living Mice", *Center for Biomedical Imaging at Stanford (CBIS) Symposium* (2015)
28. Elliott SoRelle, Orly Liba, **Adam de la Zerda**, "Spectral Contrast Optical Coherence Tomography (OCT) with Picomolar Sensitivity for Functional Imaging Studies", *Stanford Biophysics Retreat* (2015)
29. Elliott SoRelle, Orly Liba, Zeshan Hussain, Milan Gambhir, & **Adam de la Zerda**, "Contrast-Enhanced Optical Coherence Tomography with Picomolar Sensitivity for Functional *in vivo* Imaging", *World Molecular Imaging Congress (WMIC) (*2015*)*
30. Elliott SoRelle, Orly Liba, Zeshan Hussain, Milan Gabhir, **Adam de la Zerda**, "Novel large gold nanorods for ultrahigh contrast and molecular sensitivity in biomedical applications", *World Molecular Imaging Congress (WMIC)* (2015)
31. Elliott SoRelle, Orly Liba, Zeshan Hussain, Milan Gambhir. **Adam de la Zerda**, "Size dependence of Gold Nanorod Stability", *SPIE Photonics West* (2015)
32. Orly Liba, Elliott SoRelle, Dor Shaviv, Roopa Dalal, **Adam de la Zerda**, "Tissue Biodistribution of Plasmonic Nanoparticles with Sub-Cellular Resolution Using Hyperspectral Microscopy and Machine Learning", *World Molecular Imaging Congress (WMIC)* (2015)
33. Orly Liba, Elliott SoRelle, **Adam de la Zerda**, "Spectral Analysis for the Detection of Nanoparticles in Optical Coherence Tomography (OCT)", *Stanford Photonics Research Center Retreat* (2015)
34. Debasish Sen, Elliott SoRelle, Orly Liba, **Adam de la Zerda**, "Understanding T cell dynamics and function in atrophic lesions of age-related macular degeneration using single cell resolution optical coherence tomography", *Arnold and Mabel Beckman Initiative for Macular Research* (2015)
35. Elliott SoRelle, Orly Liba, **Adam de la Zerda**, "Design and Application of Contrast Agents for High Resolution Molecular Imaging with Optical Coherence Tomography (OCT)" *Stanford Biophysics Retreat* (2014)
36. **Adam de la Zerda**, Moritz Kircher, Jesse Jokerst, Christina Zavaleta, Paul Kempen, Erik Mittra, Ken Pitter, Ruimin Huang, Carl Campos, Frezghi Habte, Robert Sinclair, Cameron Brennan, Ingo Mellinghoff, Eric Holland, Sanjiv Gambhir, "A Brain Tumor Molecular Imaging Strategy using a New Triple-Modality MRI-Photoacoustic-Raman Nanoparticle", *SPIE Photonics West* (2013)
37. Y. M. Paulus, **A. de la Zerda**, D. M. Moshfeghi, M. S. Blumenkranz, S. S. Gambhir, "Photoacoustic Imaging for Functional Evaluation of Ophthalmic Circulation", *International Society for Eye Research* (2012)
38. **A. de la Zerda**, S. Bodapati, S. Keren, C. Zavaleta, R. Teed, Z. Liu, S. Tabakman, S. Vaithilingam, X. Chen, B. T. Khuri-Yakub, H. Dai, S. S. Gambhir, "Photoacoustic Molecular Imaging using Carbon Nanotubes for Ultra-high Sensitivity Imaging of Breast Cancer In-vivo", *Era of Hope* (2011)

    Abstract poster presentation was selected as the <u>Era of Hope Distinguished Predoctoral Poster Award</u>.
39. Y. M. Paulus, **A. de la Zerda**, S. Bodapati, R. M. Teed, Y. Dollberg, Butrus T. Khuri-Yakub, M. S. Blumenkranz, D. M. Moshfeghi, S. S. Gambhir, "Ophthalmic Photoacoustic Imaging for Blood Distribution Evaluation", *Association of Research in Vision and Ophthalmology ARVO* (2011)
40. **A. de la Zerda**, S. Bodapati, R. Teed, S. Tabakman, Z. Liu, B. T. Khuri-Yakub, X. Chen, H. Dai, S. S. Gambhir, "Family of enhanced photoacoustic imaging agents for high sensitivity and multiplexing studies in living mice", *World Molecular Imaging Congress* (2010)
41. **A. de la Zerda**, J. Wang, V. Perez, M. Rugerri, S. S. Gambhir, R. Awdeh, "Optical Coherence Molecular Imaging using Gold Nanorods in Living Mice Eyes", *World Molecular Imaging Congress* (2010)
42. Y. M. Paulus, **A. de la Zerda**, R. Teed, S. Bodapati, Y. Dollberg, B. T. Khuri-Yakub, M. S. Blumenkranz, D. M. Moshfeghi, S. S. Gambhir, "Photoacoustic Imaging of the Eye", *Association of Research in Vision and Ophthalmology ARVO – International Society for Imaging in the Eye – ISIE* (2010)
43. **A. de la Zerda**, Z. Liu, S. Bodapati, R. Teed, C. Zavaleta, S. Vaithilingam, X. Chen, B. T. Khuri-Yakub, H. Dai, S. S. Gambhir, "Ultra High Sensitivity Targeted Photoacoustic Imaging Agents for Cancer Early Detection in Living Mice", *World Molecular Imaging Congress* (2009)

44. **A. de la Zerda**, Y. Paulus, D. Moshfeghi, S. S. Gambhir, "Photoacoustic Imaging of the Eye for Improved Disease Detection", *World Molecular Imaging Congress* (2009)
45. **A. de la Zerda**, Z. Liu, C. Zavaleta, S. Bodapati, R. Teed, S. Vaithilingam, T. Ma, O. Oralkan, X. Chen, B. T. Khuri-Yakub, H. Dai, S. S. Gambhir "Enhanced Sensitivity Carbon Nanotubes as Targeted Photoacoustic Molecular Imaging Agents", *Proceedings of SPIE Photonics West*, 7177-93:3 1-8 (2009).

    Abstract poster presentation was awarded the best poster presentation at the Photoacoustic session at the conference – presently the largest photoacoustic conference in the world.
46. **A. de la Zerda**, C. Zavaleta, S. Keren, S. Vaithilingam, S. Bodapati, R. Teed, Z. Liu, J. Levi, B. R. Smith, T. Ma, O. Oralkan, Z. Cheng, X. Chen, H. Dai, B. T. Khuri-Yakub, S. S. Gambhir, "Photoacoustic Molecular Imaging using Single Walled Carbon Nanotubes in Living Mice", *Proceedings of SPIE Photonics West*, 7177-78:5 1-12 (2009).
47. **A. de la Zerda**, C. Zavaleta, S. Keren, S. Vaithilingam, S. Bodapati, R. Teed, Z. Liu, J. Levi, B. R. Smith, T. Ma, O. Oralkan, Z. Cheng, X. Chen, H. Dai, B. T. Khuri-Yakub, S. S. Gambhir, "Photoacoustic Molecular Imaging using Single Walled Carbon Nanotubes in Living Mice", *World Molecular Imaging Congress* (2008).

    Abstract ranked in the Top-25 out of 1400 abstracts submitted to the conference and presenter received the Young Investigator Award out of over 300 candidates for this work.
48. **A. de la Zerda**, Z. Liu, C. Zavaleta, S. Bodapati, R. Teed, S. Vaithilingam, X. Chen, B. T. Khuri-Yakub, H. Dai, S. S. Gambhir, "High Sensitivity Multiplexing of Targeted Photoacoustic Molecular Imaging Agents in Living Mice", *World Molecular Imaging Congress* (2008)
49. **A. de la Zerda**, S. Keren, S. Vaithilingam, O. Oralkan, P. Khuri-Yakub, S.S. Gambhir, "A New Simulation Tool for Photoacoustic Molecular Imaging Validated with an Experimental Imaging System", *AMI/SMI Joint Molecular Imaging Conference* (2007)
50. **A. de la Zerda**, M. L. Schipper, S. Keren, B. R. Smith, J. S.T. Ng, S.S. Gambhir, "A Comparison between Spectral and Time Domain Imaging Systems for Imaging Quantum Dots in Small Living Animals", *AMI/SMI Joint Molecular Imaging Conference* (2007)
51. M. L. Schipper, G. Iyer, A. Koh, Z. Cheng, Y. Ebenstein, S. Keren, L. A. Bentolila, **A. de la Zerda**, J. Li, B. R. Smith, J. Rao, X. Chen, A. M. Wu, R. Sinclair, S. S. Weiss, S. S. Gambhir, "Particle Size, Surface Coating, and Pegylation Influence the Biodistribution of Quantum Dots in Living Mice", *AMI/SMI Joint Molecular Imaging Conference* (2007)
52. S. Keren, **A. de la Zerda**, J. Levi, S. Vaithilingam, O. Oralkan, P. Khuri-Yakub, S.S. Gambhir, "Photoacoustic Tomography with High Resolution Small Animal Ultrasound System", *AMI/SMI Joint Molecular Imaging Conference* (2007)
53. **Adam de la Zerda**, Benjamin Armbruster, Lei Xing, "A Closed-Loop Control Framework for Adaptive Radiation Therapy (ART)", *Annual Meeting, American Association of Physicists in Medicine* (2007)
54. **Adam de la Zerda**, Benjamin Armbruster, Lei Xing, "Formulating Adaptive Radiation Therapy (ART) Treatment Planning into a Closed-Loop Control Framework", *ICCR* (2007)
55. **Adam de la Zerda**, Benjamin Armbruster, Lei Xing, "Inverse Planning for Adaptive Radiation Therapy using Dynamic Algorithm", *Annual Meeting, American Society for Radiation Oncology* (2006)
56. Benjamin Armbruster, **Adam de la Zerda**, Lei Xing, "Inverse Planning for 4D Intensity Modulated Radiation Therapy", *Annual Meeting, American Society for Radiation Oncology* (2006)
57. **Adam de la Zerda**, Benjamin Armbruster, Lei Xing, "Closed-Loop Control Algorithms for Planning Adaptive Radiation Therapy", *Annual Meeting, American Association of Physicists in Medicine* (2006)
58. Benjamin Armbruster, **Adam de la Zerda**, Lei Xing, "Dynamic Segment-Based Optimization (SBO) for 4D IMRT", *Annual Meeting, American Association of Physicists in Medicine* (2006)

BOOKS AND BOOK CHAPTERS

1. **Adam de la Zerda**, Shan X Wang (*in preparation*) Biochips and Medical Imaging. Wiley.
2. **Adam de la Zerda** (2014) Photoacoustic Imaging: Development of Imaging Systems and Molecular Agents. In *Engineering in Translational Medicine*, 2, (pp. 799-833). New York, NY: Springer.

INVITED TALKS

1. *"In-vivo molecular imaging at a cellular resolution"* *Apr 2019*
Workshop on the Future of Medical Imaging: Sensing, Learning & Visualization – Stanford, CA

2. *"Molecular imaging at a cellular resolution in vivo using Optical Coherence Tomography"* *Mar 2019*
Pew Scholars, Pew Fellows, Pew-Stewart Scholars Annual Meeting 2019 – Sarasota, FL

3. *"Molecular imaging at a cellular resolution in vivo using Optical Coherence Tomography"* *Mar 2019*
Faculty & Structural Biology Dept. Special Seminar – Stanford, CA

4. *"ISP Strategic Initiatives Spotlights: Uniquely Stanford"* *Jan 2019*
2019 Stanford Medicine Leadership Retreat – Half Moon Bay, CA

5. *"OCT Molecular Imaging"* *Oct 2018*
Zhuhai International Symposium on Molecular Imaging (ISMI) – Zhuhai, China

6. NextGen Innovation Summit *Oct 2018*
Stanford, Palo Alto, CA

7. *"Molecular Optical Coherence Tomography and its Application to Brain Imaging"* *Jul 2018*
Light:Science & Applications Conference 2018, Changchun, China

8. "*The Chan Zuckerberg Biohub Community"* *May 2018*
Israeli Life Sciences Group, Wilson Sonsini Goodrich & Rosati, Palo Alto, CA

9. *"Molecular Imaging with Optical Coherence Tomography"* *May 2018*
OSA CLEO Conference – San Jose Convention Center, San Jose, CA

10. *"OCT Molecular Imaging of the Brain"* *Apr 2018*
2018 Biophotonics Congress: Biomedical Optics – Diplomat Beach Resort, Hollywood, FL

11. *"SM-OCT for Brain Tumor Margin Detection and in vivo Neuroimaging"* *Mar 2018*
NIH High-Risk, High-Reward Symposium, Bethseda, MD

12. *"Inventing Next Generation Imaging Technologies to Diagnose and Cure Cancer"* *Mar 2018*
Damon Runyon Cancer Research Foundation's, Breakthroughs by the Bay Breakfast – The Village Pub, Woodside, CA

13. *"Molecular Imaging at a Cellular Resolution in vivo using Optical Coherence Tomography"* *Mar 2018*
Sunderland 2018 Meeting – Stanford University, Stanford, CA

14. *"Cancer Imaging"* *Nov 2017*
Social Impact Youth Summit Panel, GOODdler Foundation and United Nations Agencies (UNFPA) – SLAC, Stanford, CA

15. *"Molecular Imaging at cellular resolution in vivo using Optical Coherence Tomography"* *Oct 2017*
Helmholtz Research Institute - Munich, Germany

16. "*Frontiers in Medicine"* *Sept 2017*
Medical Center Development and Alumni Relations, Stanford University, Stanford, CA

17. *"Imaging Molecular Behavior in vivo"* *Aug 2017*
Strategic Workshop on Emerging Technologies and Interdisciplinary Team Foundation - National Cancer Institute office of Cancer Nanotechnology Research (NCI OCNR), Rockville, MD

18. *"Molecular Imaging of human performance biomarkers at cellular resolution in vivo"* *Aug 2017*
The Human Performance and Biosystems Program, Air Force Office of Scientific Research (AFOSR) - Arlington, VA

19. *"MOZART and OCT Molecular Imaging"* *July 2016*
Gordon Research Conferences: Lasers in Medicine & Biology –Mount Snow, West Dover, VT

20. *"New imaging lights the way for brain surgeons"* *Apr 2016*
Speaker, TEDxStanford, Stanford University, Stanford, CA

21. *"MOZART: high-detail molecular imaging of live subjects non-invasively"* *Apr 2016*
Rosenthal Lab, Technion – Israel Institute of Technology, Haifa, Israel

22. *"Molecular imaging of human performance biomarkers at cellular resolution in vivo"* *Nov 2015*
Combined Physics and Human Performance Program Review, Air Force Office of Scientific Research (AFOSR), San Antonio, TX

23. *"Photoacoustic Molecular Imaging and its Biomedical Applications"* *Oct 2014*
GI Research Conference, Stanford University, Stanford, CA

24. *"Photoacoustic Tomography"* *Oct 2014*
Department of Bioengineering and Radiology, Stanford University, Stanford, CA

25. *"Photoacoustic Molecular Imaging and its Application to Cancer Imaging"* *Oct 2014*
NCI Alliance of Glycobiologists for Detection of Cancer Steering Committee, NCI, Bethesda, MD

26. *"Lighting up tumors to save lives"* *Oct 2014*
Frontiers in Medicine, Stanford, CA
27. *"Photoacoustic Molecular Imaging and its Biomedical Applications"* *Aug 2014*
Tel Aviv University, Israel
28. *"Photoacoustic molecular imaging and its role in translational medicine"* *July 2014*
Agilent Technologies, Santa Clara, CA
29. *"Faculty Lecture"* *July 2014*
Stanford Summer Research Program-Amgen Scholars Program, Stanford, CA
30. *"Photoacoustic Molecular Imaging and its Biomedical Applications"* *Apr 2014*
Stanford University Photonics Retreat, Marshall, CA
31. *"Photoacoustic Molecular Imaging and its Biomedical Applications"* *Aug 2013*
SPIE NanoScience + Engineering, San Diego, CA
32. *"Photoacoustic Molecular Imaging and its Role in Translational Medicine"* *Feb 2013*
2013 Skippy Frank Conference, Stanford, CA
33. *"Photoacoustic Molecular Imaging and its Biophysical Applications"* *Feb 2013*
Biophysical Society 2013, Philadelphia, PA
34. *"Imaging Cancer Biomolecules using Light, Sound and Bio-orthogonal Chemistry"* *Oct 2012*
Structural Biology Seminar Series, Stanford University, Stanford, CA
35. *"Imaging Cancer Biomolecules using Light, Sound and Bio-orthogonal Chemistry"* *Apr 2012*
School of Chemistry, Tel Aviv University, Tel Aviv, Israel
36. *"Imaging Cancer Biomolecules using Light, Sound and Bio-orthogonal Chemistry"* *Mar 2012*
Physics Faculty, Weizmann Institute of Science, Rehovot, Israel
37. *"Imaging Cancer Biomolecules using Light, Sound and Bio-orthogonal Chemistry"* *Feb 2012*
N/MEMS seminar, Stanford Nanofabrication Facility, Stanford University, Stanford, CA
38. *"Photoacoustic Molecular Imaging in Ophthalmology"* *Sep 2010*
Stanford Photonics Research Center 2010 Annual Symposium, Stanford University, Stanford, CA
39. *"Photoacoustic Molecular Imaging and its Biomedical Applications"* *Apr 2010*
N/MEMS seminar, Stanford Nanofabrication Facility, Stanford University, Stanford, CA
40. *"Photoacoustic Molecular Imaging and biomedical applications"* *Apr 2010*
Center for Biomedical Engineering, University of Texas – Medical Branch, Galveston, TX
41. *"Photoacoustic Molecular Imaging of Cancer"* *Apr 2010*
Radiation Oncology Department, University of Miami, Miami, FL
42. *"Photoacoustic Molecular Imaging and Applications"* *Apr 2010*
Bascom Palmer Eye Institute, Miami, FL
43. *"Mixing Entrepreneurship and Academics"* *Feb 2010*
Young Presidents' Organization, Stanford University, Stanford, CA
44. *"Photoacoustic Imaging for Biomedical Applications"* *Aug 2009*
Medtech Frontiers, Newark, CA
45. *"Photoacoustic Imaging for Biomedical Applications"* *May 2009*
Laboratory Robotics Interest Group (LRIG) – Bay Area Chapter, South San Francisco, CA
46. *"Photoacoustic Molecular Imaging"* *Mar 2008*
MIPS Seminar Series, Stanford University, Stanford, CA
47. *"Photoacoustic Molecular Imaging"* *Jul 2007*
Tel Aviv University, Israel

PATENTS

- Moritz F. Kircher, **Adam de la Zerda**, Jesse Jokerst, Cristina Zavaleta, Sanjiv. S Ghambir, "Probes, Methods of Making Probes, and Methods of use" – *Patent no. 9,833,144* *2017*
- Orly Liba, Matthew D. Lew, Elliott D. SoRelle, **Adam de la Zerda**, "Methods and apparatus for speckle-free optical coherence imaging" – *Full Patent filed with USPTO, Patent number 15/768708* *2015*
- High-Resolution Optical Molecular Imaging Systems, Compositions, and Methods – *Full Patent filed with USPTO* *2015*
- A triple modality particle for brain tumor margin detection – *Full Patent filed with USPTO* *2011*
- A minimally invasive surgical tool – *Provisional Patent filed with USPTO* *2010*

- A new medical device based on photoacoustic imaging – *Provisional Patent filed with USPTO* *2009*
- Enhanced acquisition method for photoacoustic imaging – *Full Patent filed with USPTO* *2009*
- Sanjiv S. Gambhir, Hongjie Dai, Zhuang Liu, **Adam de la Zerda**, "Enhanced Sensitivity Carbon Nanotubes as Targeted Photoacoustic Molecular Imaging Agents", *Patent application number 12/552,313* *2009*
- Optics based medical device – *Provisional Patent filed with USPTO* *2006*
- Aviad Cohen, **Adam de la Zerda**, Lev Finkelstein, Ronny Ronen, Dmitry Rudoy, "Combining power prediction and optimal control approaches for performance optimization in thermally limited designs", *Patent number 7,464,278* *2005*

PROFESSIONAL REVIEWER AND PROGRAM COMMITTEES

- Program Committee Member, *Topical Meeting Optical Coherence Tomography, OSA Biomedical Optics Congress 2020*
- Committee Member, *Israel Precision Medicine Partnership (IPMP) panel meeting 2019*
- Program Committee Member, *SPIE Photonics West, PW 2019*
- Member, *Stanford Cancer Institute*
- Board Member, *American Journal of Nuclear Medicine and Molecular Imaging (AJNMMI)*
- Program Committee Member, *5th IEEE International Conference on Nano/Molecular Medicine and Engineering (IEEE-NANOMED 2011)*
- *Nature Nanotechnology*, Nature Publishing Group
- *Nanotechnology*, Institute of Physics (IOP)
- *Medical Physics*, American Association of Physicists in Medicine (Associate Editor)
- *Applied Optics*, Optical Society of America (OSA)
- *Optics Letters*, Optical Society of America (OSA)
- *Journal of Biomedical Optics*, Society of Photo-Optical Instrumentation Engineers (SPIE)
- Abstract Reviewer, *AAPM Annual Meeting*, American Association of Physicists in Medicine
- Committee Member, Pew *Charitable Trusts, Pew Annual Meeting 2017*

EXTRACURRICULAR ACTIVITIES

- Cooking, guitar playing, singing, reading, teaching