Christopher Grady Rylander
Associate Professor
Department of Mechanical Engineering
The University of Texas at Austin
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Education

- Doctor of Philosophy in Biomedical Engineering, University of Texas-Austin, August 2005, GPA. 3.83/4.0, Dissertation: *Measurement of Transient Transport of Hyper-osmotic Agents Across Cell Membranes and Resulting Optical Clearing using Differential Phase Contrast Optical Coherence Microscopy*
- Master of Science in Mechanical Engineering, University of Texas-Austin, May 2002, GPA 3.83/4.0
- Bachelor of Science in Mechanical Engineering, University of Texas-Austin, August 2000, GPA 3.93/4.0, *High Honors*

Appointments

6/2014-present: Associate Professor, Mechanical Engineering, University of Texas-Austin, Austin, TX
6/2013-8/2014: Associate Professor, Mechanical Engineering and School of Biomedical Engineering and Sciences (SBES), Virginia Tech, Blacksburg, VA
4/2007-5/2013: Assistant Professor, Mechanical Engineering and SBES, Virginia Tech, Blacksburg, VA
1/2006-4/2007: Research and Development Engineer, DermaLucent LLC, Austin, TX
8/2005-12/2005: Post-doctoral Fellow, Biomedical Engineering, University of Texas at Austin, Austin, TX
8/2000-8/2005: Graduate Research Assistant, Biomedical Engineering, University of Texas at Austin, Austin, TX
8/2003-5/2004: Graduate Teaching Assistant, Biomedical Engineering, University of Texas at Austin, Austin, TX
5/1999-8/1999: Undergraduate Research Assistant, Applied Research Laboratories, Austin, TX

Publications

*Refereed Journal Articles: (**BOLD denotes first author**, * denotes student)*

1. **M. DeWitt***, A. Pekkanen*****, J. Robertson, C.G. Rylander, M.N. Rylander. "Influence of Hyperthermia on Efficacy and Uptake of Carbon Nanohorn-Cisplatin Conjugates," *Journal of Biomechanical Engineering,* 136(2), 021003, 2014.
2. **K. A. Zimmermann***, D. Inglefield*****, J. Zhang*****, H.C. Dorn, T.E. Long, C.G. Rylander, M.N. Rylander, "Single-Walled Carbon Nanohorns Decorated with Semiconductor Quantum

Dots to Evaluate Intracellular Transport," *Journal of Nanoparticle Research*, Journal of Nanoparticle Research, 16: 2078. 2014.

3. **R.L. Hood*,** R.T. Andriani, Jr.*, S. Emch*, J.L. Robertson, C.G. Rylander, J.H. Rossmeisl, Jr., "Fiberoptic Microneedle Device Facilitates Volumetric Infusate Dispersion During Convection-Enhanced Delivery in the Brain," *Lasers in Surgery and Medicine,45(7): 418-26,* 2013.
4. **J. Whitney***, M. DeWitt*, B. Whited*, W. Carswell*, A. Simon*, C. G. Rylander, M. N. Rylander, 2013, "3D Viability Imaging of Tumor Phantoms Treated With Single-walled Carbon Nanohorns and Photothermal Therapy," *Nanotechnology*, 24(27): 275102-113, 2013. Selected as Editor's pick and featured on the cover and as a video link on the journal website.
5. **A. A. Gurjarpadhye***, B. M. Whited*, A. Sampson*, G. Niu*, K. S. Sharma*, W. C. Vogt*, G. Wang, Y. Xu, S. Soker, M. N. Rylander and C. G. Rylander, "Imaging and Characterization of Bioengineered Blood Vessels within a Bioreactor using Free-Space and Catheter-Based OCT," *Lasers in Surgery and Medicine,* 45(6): 391-400, 2013.
6. **R.L. Hood***, J.H. Rossmeisl, Jr., R.T. Andriani*, Jr., A.R. Wilkinson*, J.L. Robertson, C.G. Rylander. "Intracranial hyperthermia through local photothermal heating with a fiberoptic microneedle device," *Lasers in Surgery and Medicine,* 45(3):167-174, 2013.
7. **B. Whited***, M. Hofmann*, C. Rylander, G. Wang, S. Soker, Y. Xu, M. N. Rylander, "Dynamic, Nondestructive Imaging of a Bioengineered Vascular Graft Endothelium," *PLoS ONE* 8(4): e61275, 2013.
8. **R. L. Hood*,** A. Rodgers, W. Carswell, M. Kosoglu, M. N. Rylander, D. Grant, J. Robertson, C. G. Rylander, "Spatially Controlled Photothermal Heating of Bladder Tissue Through Single-Walled Carbon Nanohorns Delivered with the Fiberoptic Microneedle Device," *Lasers in Medical Science*, 28(4): 1143-50, 2013.
9. **J. Whitney***, A. Rodgers*, E. Harvie*, W. Carswell*, S. Torti, A. Puretzky, C. Rouleau, D. Geohegan, C.G. Rylander, M.N. Rylander, 2012, "Spatial and Temporal Measurements of Temperature and Cell Viability in Response to Nanoparticle Mediated Photothermal Therapy," *Nanomedicine*, 7(11): 1729-42, 2012.
10. **M.C. Hofmann***, B. M. Whited*, T. Criswell, M. N. Rylander, C. Rylander, S. Soker, G. Wang, Y. Xu, "A Fiber-Optic-Based Imaging System for Non-Destructive Assessment of Cell-Seeded Tissue-Engineered Scaffolds," *Tissue Engineering Part C Methods*, 18(9):677-87, 2012.
11. **M.C. Hofmann***, B. M. Whited*, J. Mitchell*, W. C. Vogt*, C. Rylander, M. N. Rylander, S. Soker, G. Wang, Y. Xu, "Scanning-fiber-based Fluorescence Mapping Method for Tissue Engineering. *Journal of Biomedical Optics*, 17(6):066010, 2012.
12. **W.C. Vogt***, A. Izquierdo-Román*, B. Nichols*, L. Lim*, J.W. Tunnell, C.G. Rylander, "Effects of Mechanical Indentation on Diffuse Reflectance Spectra, Light Transmission, and Intrinsic Optical Properties in Ex Vivo Porcine Skin", *Lasers in Surgery and Medicine,* 44(4):303-9, 2012.
13. **M.A. Kosoglu***, R.L. Hood*, C.G. Rylander, "Mechanical Strengthening of Fiberoptic Microneedles Using an Elastomeric Support," *Lasers in Surgery and Medicine*, 44(5):421-8, 2012.
14. **R.L. Hood***, Mehmet A. Kosoglu*, Matt Parker*, Christopher G. Rylander, "Effects of Microneedle Design Parameters on Hydraulic Resistance," *Journal of Medical Devices,* 5:031012-1-5, 2011.
15. **M.A. Kosoglu***, Robert L. Hood*, John H. Rossmeisl, Jr., David C. Grant, John L. Robertson, Yong Xu, M. Nichole Rylander, Christopher G. Rylander, "Fiberoptic Microneedles: Novel Optical Diffusers for Interstitial Delivery of Therapeutic Light," *Lasers in Surgery and Medicine,* 43:914-920, 2011.

16. **A. Izquierdo-Román***, William C. Vogt*, Leeanna Hyacinth*, and Christopher G. Rylander, "Mechanical Tissue Optical Clearing Technique Increases Imaging Resolution and Contrast Through Ex vivo Porcine Skin," *Lasers in Surgery and Medicine*, 43:814-823, 2011.
17. **A.A. Gurjarpadhye***, William C. Vogt*, Yajing Liu*, and Christopher G. Rylander, "Effect of Localized Mechanical Indentation on Skin Water Content Evaluated Using OCT", *International Journal of Biomedical Imaging,* 2011:817250-1-8, 2011.
18. **S. Sarkar***, Zimmermann K*, Leng W*, Vikesland P, Zhang J*, Dorn H, Diller T, Rylander C, Rylander MN., "Measurement of the Thermal Conductivity of Carbon Nanotube-Tissue Phantom Composites with the Hot Wire Probe Method," *Annals of Biomedical Engineering,* 39(6):1745-58, 2011.
19. **S. Sarkar***, A. Gurjarpadhye*, C. Rylander, M. N. Rylander," Optical properties of breast tumor phantoms containing carbon nanotubes and nanohorns", *Journal of Biomedical Optics*, 16 (5):051304-1-11, 2011.
20. **J. Whitney***, S. Sarkar*, J. Zhang*, T. Do, T. Young, M.K. Manson, T.A. Campbell, A.A. Puretzky, C.M. Rouleau, K.L. More, D.B. Geohegan, C.G. Rylander, H.C. Dorn, M.N. Rylander, "Single Walled Carbon Nanohorns as Photothermal Cancer Agents," *Lasers in Surgery and Medicine*, 43(1):43-51, 2011.
21. **M.A. Kosoglu***, R. L. Hood*, Y. Chen*, Y. Xu, MN Rylander, C Rylander, "Fiber Optic Microneedles for Transdermal Light Delivery: Ex Vivo Porcine Skin Penetration Experiments," *Journal of Biomechanical Engineering*, 132(9):091014-1-7, 2010.
22. **J.W. Fisher***, C. Buchanan*, C. Szot*, S. Sarkar*, C. Rylander, and M. N. Rylander, "Photothermal Response of Human and Murine Cancer Cells to Multiwalled Carbon Nanotubes and Laser Irradiation," *Cancer Research*, 70 (23):1-10, 2010.
23. **J. Zhang***, J. Ge, M.D. Shultz, E. Chung, G. Singh, C. Shu, P. Fatouros, S. Henderson, F. Corwin, D. Geohegan, A. Puretzky, C. Rouleau, K. More, C. Rylander, M. N. Rylander, H. Gibson, H. Dorn, "In Vitro and In Vivo Studies of Single-Walled Carbon Nanohorns with Encapsulated Metallofullerenes and Exohedrally Functionalized Quantum Dots," *Nano Letters*, 10(8):2843-48, 2010.
24. **W.C. Vogt***, H. Shen, G. Wang, C. G. Rylander, "Parametric Study of Tissue Optical Clearing by Localized Mechanical Compression using Combined Finite Element and Monte Carlo Simulation,*" Journal of Innovative Optical Health Sciences*, 3(3):1-9, 2010.
25. **S. Sarkar***, C. G. Rylander, and M. N. Rylander, "Photothermal Response of Tissue Phantoms Containing Multi-walled Carbon Nanotubes: Modified Optical and thermal properties," *Journal of Biomechanical Engineering*, 132:044505-1-5, 2010.
26. **C.W. Drew***, T. E. Milner, C. G. Rylander**,** "Mechanical tissue optical clearing devices: Enhancement of light penetration in skin using OCT," *Journal of Biomedical Optics*, 14(6):064019-1-6, 2009.
27. **C.G. Rylander**, T. E. Milner, S. A. Baranov, J. S. Nelson, "Mechanical tissue optical clearing devices: Enhancement of light penetration in ex-vivo porcine skin and adipose tissue," *Lasers in Surgery and Medicine*, 40(10):688-694, 2008. (Cover of Journal)
28. **C.G. Rylander***, O. F. Stumpp*, T. E. Milner, N. J. Kemp*, J. M. Mendenhall, K. R. Diller, A. J. Welch, "Dehydration mechanism of optical clearing in tissue," *Journal of Biomedical Optics* 11(4):041117-1-7, 2006.
29. **J. Kim***, D. P. Dave´, C. G. Rylander*, J. Oh, and T. E. Milner, "Spatial refractive index measurement of porcine artery using differential phase optical coherence microscopy," *Lasers in Surgery and Medincine,* 38:955–959, 2006.
30. **C.G. Rylander***, D.P. Dave´, T. Akkin, T.E. Milner, K.R. Diller, A.J. Welch, "Quantitative phase-contrast imaging of cells with phase-sensitive optical coherence microscopy," *Optics Letters,* 29(13):1509-1511, 2004.

Patents:

1. "Fiber Array for Optical Imaging and Therapeutics," Inventors: Christopher Rylander, Mehmet Kosoglu, Robert Hood, John Robertson, John Rossmeisl, David Grant, Marissa N. Rylander, U.S. Patent Application No. 14/002,058, Date Filed: August 28, 2013, Currently under review.
2. "Fiber Array for Optical Imaging and Therapeutics," Inventors: Christopher Rylander, Thomas A. Campbell, Ge Wang, Yong Xu, Mehmet Alpaslan Kosoglu, US Patent Application No: 13/203,800, Date Filed: September 29, 2011, Allowance granted.
3. "Systems, Devices, and Methods for Optically Clearing Tissue," Inventors: Christopher G. Rylander, Thomas E. Milner, Oliver Stumpp, J. Stuart Nelson, Date Filed: August 11, 2006, U.S. Patent No.: 8323273, Issue Date: December 4, 2012.

Research Funding Awarded

Summary:

Funding Category	Total	Rylander Portion
External	$4,370,307	$1,349,561
Internal	$1,125,901	$ 307,375
Total Funded Research	$5,496,208	$1,656,936

External Awards:

1. "Fiberoptic Microneedle Device for Combined Light and Nanomedicine Delivery: Mimicking Nature's Design of a Mosquito," NSF: CBET: Biomedical Engineering, $300,000, 8/1/2009-7/31/2012, PI: Chris Rylander (50%), and co-PIs: Nichole Rylander (25%), and Yong Xu (25%).
2. "One-year graduate student supplement for NSF CBET 0731108 Characterization and Model Development for the Cellular Response to Nanotube-Mediated Laser Therapy," $36,000, 8/1/2009–7/31/2010, PI: Nichole Rylander (100%), co-PI: Chris Rylander.
3. "Optical Molecular Tomography for Regenerative Medicine," NIH: NHLBI, $2,923,321, 3/1/2010-11/3/2013, PI: Ge Wang (60%), and co-PIs: Chris Rylander (20%), Nichole Rylander (10%), and Yong Xu (10%).
4. "Fiberoptic Microneedle Device for Nanoparticle Enhanced Photothermal Therapy of Bladder Cancer," NIH: NCI, $341,938, 1/1/2011-12/31/2012, PI: Chris Rylander (60%), and co-PIs: Nichole Rylander (30%), John Robertson (9%), and David Grant (1%).
5. "Workshop on Biotransport Education during Summer Bioengineering Conferences, Farmington, PA, June 22-25, 2011 and Summer 2012," NSF: CBET: Biomedical Engineering, $18,000, 5/1/2011-4/3/2013, PI: Rupak Banerjee (100%), and co-PIs: Ram Devireddy, and Chris Rylander.
6. "Arborizing Fiberoptic Microneedle Device for Photo-thermo-chemotherapy of Malignant Glioma," Wallace Coulter Foundation, $361,048, 9/1/2011-8/31/2014, PI: Chris Rylander (70%), and co-PIs: John Robertson (20%), and John Rossmeisl (10%).
7. "Bone Scaffolds for Heat Shock Protein Induced Regeneration and Healing," NSF: CBET: RAPD, $290,000, 9/1/2011-8/31/2014, PI: Nichole Rylander (50%), and co-PIs: Chris Rylander (30%), Ge Wang (10%), and Renee Prater (10%).
8. "Development and Manufacturing of Fiberoptic Microneedle Devices for Cosmetic and Cancer Treatments," Center for Innovative Technology Commonwealth Research Commercialization Fund, $100,000, 1/6/2014-1/5/2015, PI: Chris Rylander (70%), and co-PI: John Robertson (30%).

Internal Awards:

1. "Development of Trimetallic Nitride Templated Endohedral Metallofullerenes," $73,325, 12/25/2007–12/25/2008; PI: Nichole Rylander, (25%), co-PIs: Chris Rylander (25%), Scott Huxtable (25%), and Harry Dorn (25%).
2. "Tissue Optical Clearing to Assist Laser Hyperthermia of Cancer," $35,000, 6/15/2008-6/14/2009, PI: Chris Rylander (100%), co-PI: Bob Kraft.
3. "Characterization and Potential Therapeutic Intervention of Human Inflammatory Network," $175,000, 8/15/2008-8/14/2009, PI: Liwu Li (100%), and co-PIs: Nichole Rylander, John Tyson, Paul Carlier, Hara P. Misra, Daniel Capelluto, Chris Lawrence, Ge Wang, and Chris Rylander.
4. "Investigation of a Novel Tissue Regeneration Technique: Development of Heat Shock Protein Based Therapies," $72,576, 7/21/2008-6/30/2009, PI: Joseph Freeman (25%), and co-PIs: Nichole Rylander (25%), Chris Rylander (25%), and Rafael Davalos (25%).
5. "Holey Scaffolds," $270,000, 07/01/2009-06/30/2012, PI: Yong Xu (32%), and co-PIs: Nichole Rylander (17%), Chris Rylander (17%), Ge Wang (17%), and Joseph Freeman (17%).
6. "Carbon Nanohorn Theranostic Cancer Agents," $120,000, 7/01/2011-7/01/2013, PI: Nichole Rylander (45%), Chris Rylander (40%), Tim Long (5%), Ge Wang (5%), and John Robertson (5%).
7. "Fiberoptic Microneedle Device for Therapeutic Cancer Vaccine Delivery," $120,000, 7/01/2012-6/30/2014, PI: Chris Rylander (75%), and Elankumaran Subbiah (25%).
8. "Uncovering the Role of the Microenvironment in Cancer Progression and Therapeutic Intervention using a Multi-Disciplinary Tumor Engineering Platform," $260,000, 7/1/2013-7/1/2015, PI: Nichole Rylander (60%), Chris Rylander (20%), John Robertson (10%), Carla Finkelstein (10%).

Collaborators & Other Affiliations

Collaborators and Co-Authors:

Nichole Rylander- Mechanical Engineering and SBES at Virginia Tech
John Robertson- Virginia-Maryland Regional College of Veterinary Medicine
John Rossmeisl- Virginia-Maryland Regional College of Veterinary Medicine
Elankumaran Subbiah- Virginia-Maryland Regional College of Veterinary Medicine
David Grant- Virginia-Maryland Regional College of Veterinary Medicine
Harry Dorn- Chemistry Department at Virginia Tech
Yong Xu- Electrical Engineering at Virginia Tech
Ge Wang- SBES at Virginia Tech
Tom Diller- Mechanical Engineering at Virginia Tech
Shay Soker- Wake Forest Institute for Regenerative Medicine (WFIRM)

Graduate and Postdoctoral Advisors:

Dr. Kenneth R. Diller, University of Texas-Austin, (512)471-7167, kdiller@mail.utexas.edu
Dr. A. J. Welch, University of Texas-Austin, (512)471-1453, welch@mail.utexas.edu
Dr. Thomas E. Milner, University of Texas-Austin, (512)471-1332, milner@mail.utexas.edu

Graduate Student Advisees (Completed):

1. Rudy Andriani, M.S. ME, August 15, 2014, Title: "Design and Validation of Medical Devices for Photothermally Augmented Treatments." Scientific reviewer at the Center for Devices and Radiological Health at FDA.
2. Robert Lyle Hood, Ph.D. SBES, August 29, 2013, Title: "Development of a Fiberoptic Microneedle Device for Simultaneous Co-Delivery of Fluid Agents and Laser Light with

Specific Applications in the Treatment of Brain and Bladder Cancers." Post Doc at Houston Methodist Hospital.

3. Abhijit Gurjarpadhye, Ph.D. SBES, August 7, 2013, Title: "Dynamic Non-Destructive Monitoring of Bioengineered Blood Vessel Development within a Bioreactor using Multi-Modality Imaging." Post-doctoral at Stanford University.
4. William Vogt, Ph.D. SBES, July 22, 2013, Title: "Development of Mechanical Optical Clearing Devices for Improved Light Delivery in Optical Diagnostics." Accepted an Oak Ridge Institute for Science and Education (ORISE) post-doctoral fellowship at the Food and Drug Administration (FDA).
5. Mehmet Alpasan Kosoglu- Ph.D. from Mechanical Engineering, October 19, 2011, Title: "Fiberoptic Microneedles for Transdermal Light Delivery." Scientific reviewer at the Center for Devices and Radiological Health at FDA.
6. Kristen Zimmermann– M.S. from School of Biomedical Engineering and Sciences, April 26, 2012, Title: "Intracellular Transport in Cancer Treatments: Carbon Nanohorns Conjugated to Quantum Dots and Chemotherapeutic Agents," co-Advised with Nichole Rylander.
7. Ye Chen- M.Eng. from Mechanical Engineering, June 18, 2012, Title: "Fiberoptic Microneedle Device for Nanoparticle-Enhanced Photothermal Therapy of Invasive Bladder Cancer."
8. Robert Lyle Hood- M.S. from School of Biomedical Engineering and Sciences, August 11, 2011, Title: "Development of a Hollow-Core Fiberoptic Microneedle Device for the Treatment of Invasive Bladder Cancer."
9. Alondra Izquierdo-Román- M.S. from School of Biomedical Engineering and Sciences, August 11, 2011, Title: "Localized Mechanical Compression as a Technique for the Modification of Biological Tissue Optical Properties." Image Processing Engineer- EZ Systems, Vistakon.
10. Zack Montgomery- M.Eng. from Mechanical Engineering, January 24, 2011, Title: "Determination of Diffusion Coefficients in Calcium Alginate Phantoms."
11. Yajing Liu- M.S. from School of Biomedical Engineering and Sciences, May 5, 2009, Title: "Measurement of tissue optical properties during mechanical compression using swept source optical coherence tomography." Senior Diagnostic Consumables Engineer, Cepheid. Previously with Cook Medical.
12. Christopher Drew- M.S. from Mechanical Engineering, May 4, 2009, Title: "Mechanical Loading for Modifying Tissue Water Content and Optical Properties." Sr. Management Consultant at Blackstone Technology Group.

Graduate Student Advisees (Current):

1. Egleide Elenes- SBES, Ph.D. expected May 2016, (co-advisor with Nichole Rylander)
2. Chris Idelson- SBES, Ph.D. expected May 2017

Postdoctoral Advisees (Completed):
Charles Smith, 7-1-2012 to 2-24-2013

Postdoctoral Advisees (Current):
Katelyn Colacino, 1-6-2014 to 1-5-2015

Teaching Activities

- ME 3304 Undergraduate Heat and Mass Transport Spring 2008, 2009, 2010, 2012,2014
- ME/BMES 5984 Biomedical Optics: Therapeutics Fall 2008, 2010, 2012

- ME/BMES 5984 Biomedical Optics: Diagnostics Fall 2011
- BMES 5014 Quantitative Physiology (20% effort) Spring 2008, 2009

Professional Society Membership

- American Society for Lasers in Medicine and Surgery (Fellow)
- American Society of Mechanical Engineers
- Biomedical Engineering Society
- Pi Tau Sigma Mechanical Engineering Honor Society
- Tau Beta Pi Engineering Honor Society

Professional Service and Outreach

- Editorial Board of Lasers in Surgery and Medicine (LSM), Spring 2010-present
- American Society for Lasers in Medicine and Surgery (ASLMS) Research and Development Committee, Fall 2009-present, Committee Chair 2013.
- Reviewed articles frequently for: Journal of Biomedical Optics, Lasers in Surgery and Medicine, Lasers in Medical Science, Journal of Selected Topics in Quantum Electronics, Optics Letters, Fall 2006-present
- Session chair at the ASME Summer Bioengineering Conference, June 2008-present
- Session chair of the Basic Science Session at the ASLMS Annual Meeting, April 2008-present
- Session chair at the Biomedical Engineering Society Annual Meeting (BMES) Conference, Fall 2010-present
- Grant reviewer for the NSF Biophotonics, Advanced Imaging, and Sensing for Human Health (BISH) panel, 11/28-29/2007
- Grant reviewer for the ASLMS Research Grant, January-March 2011-present
- BBSI Research Experience for Undergraduates (REU) program, Summers 2008-2010
- Faculty Advisor for VT-WFU Biomedical Engineering Society (BMES) Student Chapter, 2009-present

University, College, and Department Service

- Service as usher or marshal for the VT College of Engineering Spring Commencement, 2010-present.
- Served on the SBES Assistant Department Head Search Committee, Fall 2010
- Served on the ECE Assistant Professor Search Committee, Spring 2012
- Reviewed Mechanical Engineering undergraduate scholarship applications, April 2010
- Served as an examiner and/or chair on the qualifying exam for SBES, 2007-present
- Created a problem and graded for the ME qualifying exam, 2007-present
- Student advisor for the College of Engineering Diversity Summer Research Program, Summers 2007-2010
- Participated in graduate student recruiting activities for the School of Biomedical Engineering and Sciences, 2007-present
- Assisted with VT Summer Around the Drillfield (SAD) by giving tours and demonstrations in my laboratory to VT alumni and potential students, Saturday, July 18, 2009
- Participated in the 5-year SBES graduate program review process, 2008
- Served on the SBES Graduate Curriculum Committee, 2007 & 2008

- Served as a presentation moderator for the SBES graduate student symposium held at Virginia Tech, May 2007

Special Achievements and Awards

- TechConnect Innovation Awardee at TechConnect-National Innovation Summit, Washington, D.C., May 14-15, 2013
- Selected for NSF IGERT Program scholarship and graduate training in Cellular and Molecular Imaging for Diagnostics and Therapeutics, 2000-2005.
- Selected for best student/resident paper submitted in the basic science section of the 23rd Meeting of the American Society for Lasers in Medicine and Surgery, April 2003.
- Selected for UT College of Engineering Honors Scholars Program scholarship and undergraduate training at Applied Research Laboratories, 1998-2000.

Special Achievements of Current and Former Graduate Advisees

- Egleide Elenes (graduate student)- received 3-year NSF Graduate Research Fellowship, Fall 2012- Summer 2015
- Kristen Zimmermann (graduate student)- received 3-year NSF Graduate Research Fellowship, Fall 2010- Summer 2013
- Rudy Andriani (MS student) received $1000 Air Force Travel Grant to attend ASLMS annual conference in Phoenix, AZ, April 2014
- Egleide Elenes (PhD student) received $1000 Air Force Travel Grant to attend ASLMS annual conference in Phoenix, AZ, April 2014
- Chris Idelson (Ph.D. student) received $1000 Air Force Travel Grant to attend ASLMS annual conference in Phoenix, AZ, April 2014
- Rudy Andriani (MS student) received Best Student/Resident Paper, Surgical Applications/Interstitial Laser Therapy section, 34th ASLMS Annual Conference in Phoenix, AZ, April 2014
- William Vogt (graduate student)- ICTAS Doctoral Scholars Fellowship - 4 years of GRA stipend, tuition, fees, and partial conference travel, Fall 2009-Summer 2013
- William Vogt (graduate student) - $1000 Travel Grant Award to ASLMS 2012 from USAF Office of Research
- Robert Lyle Hood (graduate student) - $1000 Travel Grant Award to ASLMS 2012 from USAF Office of Research
- Abhijit A. Gurjarpadhye (graduate student)- $1000 Travel Grant Award to ASLMS 2012 from USAF Office of Research
- Robert Lyle Hood (graduate stuent)- $415 John Chato Travel Grant to ASME SBC, June 2011
- Robert Lyle Hood (graduate student)- 1st place, Best Masters Presentation, SBES Symposium, May 2011
- Mehmet Alpaslan Kosoglu (graduate student)- Best Student Paper in Experimental and Translational Medicine at ASLMS 2011 Meeting
- Mehmet Alpaslan Kosoglu (graduate student)- $1000 Travel Grant Award to ASLMS 2011 from USAF Office of Research
- Alondra Izquierdo-Román (graduate student)- $1000 Travel Grant Award to ASLMS 2011 from USAF Office of Research
- William Vogt (graduate student)- $1000 Travel Grant Award to ASLMS 2011 from USAF Office of Research

- Robert Lyle Hood (graduate student)- $1000 Travel Grant Award to ASLMS 2011 from USAF Office of Research
- Mehmet Alpaslan Kosoglu (graduate student)- 2nd place, Virginia Tech College of Engineering, Paul E. Torgersen Graduate Student Research Excellence Award, March 2011
- Alondra Izquierdo-Román (graduate student)- 3rd place, Virginia Tech College of Engineering Paul E. Torgersen Graduate Student Research Excellence award - $300, March 2011
- William Vogt (graduate student)- 2nd place Outstanding Research Poster presented for ICTAS Research Day, September 28, 2010.
- Jon Whitney (graduate student)- 3rd place Outstanding Research Poster presented for ICTAS Research Day, September 28, 2010.
- Robert Lyle Hood (graduate student)- VT-GSA – Travel Grant Recipient - $200, Spring 2010
- Kristen Zimmermann (graduate student)- VT-GSA – Travel Grant Recipient - $300, Spring 2010
- Alondra Izquierdo-Román (graduate student)- Best Student Paper in Basic Sciences at ASLMS 2010 Meeting
- Alondra Izquierdo-Román (graduate student)- Best e-Poster Award in Basic Science at ASLMS 2010 Annual Meeting
- Alondra Izquierdo-Román (graduate student)- 3rd place poster presentation at 2010 SBES Student Symposium
- Alondra Izquierdo-Román (graduate student)- $1000 Travel Grant Award to ASLMS 2010 from USAF Office of Research
- Mehmet Alpasan Kosoglu (graduate student)- $1000 Travel Grant Award to ASLMS 2010 from USAF Office of Research
- Yajing Liu (graduate student)- $1000 Travel Grant Award to ASLMS 2009 from USAF Office of Research