

VIII. CENTER-WIDE OUTPUTS AND ISSUES

1. PUBLICATIONS

a. Peer-Reviewed Publications

1. C. L. Young, L. R. Dalton, B. H. Robinson, A. L. Kwiram, "Proton ENDOR studies of soliton wavefunctions and dynamics in polyacetylenes," *J. Phys. Chem. B*, (2004). *Submitted*
2. J. Luo, M. Haller, M. Ma, S. Liu, T. D. Kim, Y. Tian, S. H. Jang, B. Chen, L. R. Dalton, A. K. Jen, "Nanoscale architectural control and macromolecular engineering of nonlinear optical dendrimers and polymers for electro-optics," *J. Phys. Chem. B*, (2004). *Submitted*
3. L. R. Dalton, "Organic electro-optic materials," *Pure and Applied Chemistry*, (2004). *In Press*
4. L. S. Fifield, L. R. Dalton, G. E. Fryxell, R. S. Addleman, M. H. Engelhard, C. L. Aardahl, "Noncovalent functionalization of carbon nanotubes with molecular anchors using supercritical fluids," *J. Phys. Chem. B*, (2004). *Submitted*
5. G. Khalil, C. Costin, J. Crafton, S. Grenoble, M. Gouterman, J. Callis, L. R. Dalton, "Dual luminophore pressure sensitive paint. I: Ratio of reference to sensor giving a small temperature dependency," *Sensor and Actuator B. Chemical*, Vol 97, 13-21 (2004).
6. G. E. Khalil, K. Lau, G. D. Phelan, B. Carlson, M. Gouterman, J. B. Callis, L. R. Dalton, "Europium beta-diketonate temperature sensors: Effects of ligands, matrix, and concentration," *Rev. Sci. Instrum.*, Vol 75, Iss 1, 192-206 (2004).
7. Yariv, C. Zhang, L. R. Dalton, Y. Huang, G. T. Palocz, "Fabrication and Replication of Polymer Integrated Optical Devices Using Electron-Beam Lithography and Soft Lithography," *J. Phys. Chem. B*, (2004). *Submitted*
8. W. H. Flora, A. Ortiz, D. V. McGrath, N. R. Armstrong, "Quinacridone Dendrimers as Organic Light-Emitting Diode Dopants: Analysis of Photophysical, Electrochemical, and Energy Harvesting Properties," *Adv. Mat.*, (2004). *Submitted*
9. Sinyukov, M. Hayden, "Efficient electro-optic polymers for THz applications," *J. Phys. Chem. B*, (2004). *In Press*
10. M. M. Alam, C. J. Tonzola, B. A. Bean, S. A. Jenekhe, "New Soluble n-Type Conjugated Polymers for Use as Electron Transport Materials in Light Emitting Diodes," *Macromolecules*, (2004). *In Press*
11. H. Zhang, D. Lu, M. Fallahi, "Active organic-inorganic sol gel with high thermal stability for nonlinear optical applications," *Appl. Phys. Lett.*, Vol 84, Iss 7, 1064-1066 (2004).
12. V. Coropceanu, S. Barlow, C. Lambert, J. C. Durivage, T. G. Bill, G. Noell, S. R. Marder, J. Bredas, N. E. Gruhn, "Electronic Couplings in Organic Mixed-Valence Compounds: The Contribution of Photoelectron Spectroscopy," *J. Phys. Chem. B*, Vol 126, Iss (9), 2727-2731 (2004).

13. M. J. Serpe, J. Kim, L. A. Lyon, "Colloidal Hydrogel Microlenses," *Adv. Mat.*, Vol 16, 184-187 (2004).
14. C. S. Liu, R. Hernandez, G. B. Schuster, "The mechanism for radical cation transport in duplex DNA oligonucleotides," *J. AM. Chem. Soc.*, (2004). *In Press*
15. C. R. Locker, R. Hernandez, "Folding behavior of model proteins with weak energetic frustration," *J. Chem. Phys.*, (2004). *Submittee*
16. J. T. Petty, J. Zheng, R. M. Dickson, "DNA Templated Ag Nanocluster Formation," *J. Amer. Chem. Soc.*, (2004). *In Press*
17. P. Kumar, T. H. Lee, R. M. Dickson, A. Mehta, B. G. Sumpter, M. D. Barnes, "Photon antibunching from oriented semiconducting nanostructures," *J. Chem. Phys.*, (2004). *In Press*
18. S. Ramasesha, M. Das, S. Mazumdar, "Electronic processes in organic light emitting diodes," *Bulletin of Radiation and Photochemical Sciences*, (2004). *In Press*
19. V. M. Geskin, C. Lambert, J. L. Bredas, "Origin of High Second- and Third-Order NLO Response in Ammonio/Borato Diphenylpolyene Zwitterions: The Role of Polarized Aromatic Groups," *Journal of the American Chemical Society*, Vol 125, 15651-15658 (2004).
20. R. D. Hreha, C. P. George, A. Haldi, B. Domercq, M. Malagoli, S. Barlow, J. L. Bredas, B. Kippelen, S. R. Marder, "2,7-Bis(diarylamino)-9,9-dimethylfluorenes as Hole-Transport Materials for Organic Light-Emitting Diodes," *Advanced Functional Materials*, Vol 13, 967-973 (2004).
21. Pogantsch, A. K. Mahler, G. Hayn, R. Saf, F. Stelzer, E. J. List, J. L. Bredas, E. Zojer, "Excited State Localization Effects in Alternating meta- and para-Linked Poly(phenylenevinylene)'s," *Chemical Physics*, Vol 297, 143 -151 (2004).
22. M. Sinyukov, M. R. Leahy, L. M. Hayden, J. Luo, A. K. Jen, L. R. Dalton, "Resonance enhanced THz generation in electro-optic polymers near the absorption maximum," *CLEO 2004*, (2004).
23. M. R. Leahy, J. French, L. Hayden, "Atomistic molecular modeling of electric field poling and saturation of the electro-optic coefficient as a function of the loading parameter," *J. Chem. Phys.*, (2004). *In Preparation*
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25. M. Cai, M. Stankova, S. K. Pond, J. W. Perry, H. I. Yamamura, D. Trivedi, V. J. Hruby, "Real-Time Differentiation of G-Protein Coupled Receptor Agonists and Antagonists by Two Photon Fluorescence Laser Microscopy," *JACS*, (2004). *Submitted*

26. J. K. Poon, J. Scheuer, S. Mookherjea, G. T. Paloczi, Y. Huang, A. Yariv, "Matrix Analysis of Microring Coupled Resonator Optical Waveguides," *Optics Express*, Vol 12, Iss 1, 90-103 (2004).
27. Y. Huang, G. T. Paloczi, J. K. Poon, A. Yariv, "Demonstration of Flexible Freestanding All-Polymer Integrated Optical Ring Resonator Devices," *Adv. Mat.*, Vol 16, Iss 1, 44-48 (2004).
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29. G. T. Paloczi, Y. Huang, J. Scheuer, A. Yariv, "Practical considerations of soft lithography fabrication for polymer integrated optical devices," (2004). *Submitted*
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31. E. Palmqvist, B. B. Iversen, E. Zanghellini, M. Behm, G. D. Stucky, "A Crystalline Microporous Narrow Bandgap Semiconductor," *Angew. Chemie*, Vol 116, 718-722 (2004).
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33. Y. Pereverzev, O. Prezhdo, L. Dalton, "Mean-field theories of acentric order of dipolar chromophores in electro-optic polymers," *Chem. Phys.*, (2004). *In Press*
34. D. Kilin, Y. Pereverzev, O. Prezhdo, "Application of quantized Hamilton dynamics to decoherence in the Jaynes-Cumming model," *J. Chem. Phys.*, (2004). *In Press*
35. W. Deng, W. A. Goddard III, "Predictions of Hole Mobilities in Oligoacene Organic Semiconductors from Quantum Mechanical Calculations," (2004). *In Press*
36. R. D. Nielsen, H. L. Rommel, B. H. Robinson, "Simulation of the Loading Parameter in Organic Nonlinear Optical Materials," *J. Phys. Chem. B*, (2004). *In Preparation*
37. Y. Liao, B. H. Robinson, "Novel Applications of 2-cyanoethylanilines in the Synthesis of Conjugated Primary and Secondary Anilines," *Tetrahedron Letters*, Vol 45, Iss 7, 1473-1475 (2004).
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40. R. D. Nielsen, B. H. Robinson, "A Novel Relaxation Equation of Motion," *Physical Chemistry*, Vol 108, 1589-1600 (2004).

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46. B. Maune, R. Lawson, C. Gunn, A. Scherer, L. Dalton, "Electrically tunable ring resonators incorporating nematic liquid crystals as cladding layers," *Appl. Phys. Lett.*, Vol 83, Iss 23, 4689-4691 (2003).
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118. S. M. Kuebler, K. Mohanalingam, J. W. Perry, "Electrically Switchable Gratings Microfabricated by Two-Photon-Induced Polymerization," (2003). *Submitted*
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133. K. Choi, E. W. McFarland, G. D. Stucky, "Electrocatalytic Properties of Thin Mesoporous Platinum Films Synthesized Utilizing Potential-Controlled Surfactant Assembly," *Adv. Mat.*, Vol 15, 2018-2021 (2003).
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136. C. Brooksby, O. Prezhdo, P. Reid, "Molecular dynamics simulation of OCIO solvation in water," *J. Chem. Phys.*, Vol 118, 4563-4572 (2003).
137. W. Stier, O. Prezhdo, "Non-adiabatic molecular dynamics simulation of solar cell electron transfer," *J. Mol. Struct. (Theochem.)*, Vol 630, 33-43 (2003).
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140. Brooksby, O. Prezhdo, "Quantum interference by non-interacting classical trajectories," *Chem. Phys. Lett.*, Vol 378, 533-538 (2003).
141. R. A. Kopelman, S. M. Snyder, N. L. Frank, "Tunable Photochromism of Spirooxazines via Metal Complexation," *JACS*, Vol 125, Iss 45, 13684-13685 (2003).
142. W. Kaminsky, M. Geday, B. Kahr, "Optical Rotatory and Circular Dichroic Scattering," *J. Phys. Chem. A*, Vol 107, 2800-2807 (2003).

143. K. Claborn, E. Puklin-Faucher, M. Kurimoto, B. Kahr, W. Kaminsky, "Circular dichroism imaging microscopy: Application to enantiomorphous twinning in 1,8-dihydroxyanthraquinone," *JACS*, Vol 125, 14825 -14831 (2003).

b. Books and Book Chapters

1. B. Kahr, "Crystal Engineering in Kindergarten," Vol 4, 3 -9 (2004).
2. L. R. Dalton, D. H. Bale, "Nonlinear Optical Materials," *Kirk-Othmer Encyclopedia of Chemical Technology, Fifth Addition*, (2003).
3. Jen, R. Nielsen, B. Robinson, W. Steier, L. Dalton, "Rational design of organic electro-optic materials," *Electrical, optical, and magnetic properties of organic solid state materials, Volume 708, BB4.4.1-BB4.4.8* (2003).
4. P. Rabiei, W. H. Steier, C. Zhang, L. R. Dalton, "Integrated WDM polymer modulator," *Trends in Optics and Photonics, Volume 70*, 31-33 (2003).
5. L. R. Dalton, "Nonlinear optics - applications: Electro Optics, EO," *Encyclopedia of Modern Optics*, (2003). *Submitted*

c. Other Publications

1. S. Yoo, B. Domercq, C. L. Donley, C. Carter, W. Xia, B. A. Minch, D. F. O'Brien, N. R. Armstrong, B. Kippelen, "Organic Photovoltaic Cells Containing Discotic Liquid Crystalline Phthalocyanines," *International Symposium Organic Materials and Nanotechnology - SPIE - Organic Photovoltaics IV*, Vol 5215, (2004). *In Press*
2. T. H. Lee, R. M. Dickson, "Nanocomputing with Nanocrystals," *Optics and Photonics News*, (2004). *In Press*
3. L. R. Dalton, A. K. Jen, W. H. Steier, B. H. Robinson, S. H. Jang, O. Clot, H. C. Song, Y. H. Kuo, C. Zhang, P. Rabiei, S. W. Ahn, M. Oh, "Organic electro-optic materials: Some unique opportunities," *Proc. SPIE*, Vol 5351, 1-15 (2004).
4. M. A. Haller, R. Lawson, O. Clot, T. Sherwood, L. Dalton, A. K. Jen, "Simple reflection measurement of nonlinear optical activity using silicon as an electrode," *Proc. SPIE*, Vol 5212, 326-331 (2003).
5. L. R. Dalton, B. H. Robinson, R. Nielsen, A. K. Jen, P. Rabiei, W. H. Steier, "Organic Electro-Optics: Exploiting the Best of Electronics and Photonics," *Proc. SPIE*, Vol 4991, 508-519 (2003).
6. J. Luo, S. Liu, M. Haller, H. Li, T. Kim, K. Kim, H. Tang, S. Jang, S. Jang, H. Ma, L. R. Dalton, A. K. Jen, "Recent progress in developing highly efficient nonlinear optical chromophores and side-chain dendronized polymers for electro-optics," *Proc. SPIE*, Vol 4991, 520-520 (2003).
7. C. Zhang, H. Zhang, M. Oh, L. R. Dalton, W. H. Steier, "What the ultimate polymeric electro-optic materials will be: Guest-host, crosslinked, or side-chain," *Proc. SPIE*, Vol 4991, 537-551 (2003).

8. L. R. Dalton, "Novel Polymer-Based, High-Speed Electro-Optic Devices," *Proceedings 29th ECOC-14th IOOC 2003, volume 2*, 246-249 (2003).
9. J. G. Grote, N. Ogata, J. A. Hagen, E. Heckman, M. J. Curley, P. P. Yaney, M. O. Stone, D. E. Diggs, R. L. Nelson, J. S. Zetts, F. K. Hopkins, L. R. Dalton, "Deoxyribonucleic Acid (DNA)-Based Nonlinear Optics," *Proc. SPIE*, Vol 5211, 53-62 (2003).
10. J. Luo, T. D. Kim, H. Ma, S. Liu, S. H. Kang, S. Wong, M. A. Haller, S. H. Jang, H. Li, R. R. Barto, C. W. Frank, L. R. Dalton, A. K. Jen, "Nanoscale architectural control of organic functional materials for photonics," *Proc. SPIE*, Vol 5224, 104-112 (2003).
11. G. D. Phelan, B. Carlson, X. Jiang, A. K. Jen, L. R. Dalton, "Organic light-emitting diodes containing fluorinated asymmetrical europium cored beta-diketone complexes," *Proc. SPIE*, Vol 4800, 105-114 (2003).
12. B. Carlson, G. D. Phelan, X. Jiang, W. Kaminsky, A. K. Jen, L. R. Dalton, "Organic light emitting devices based upon divalent osmium complexes: Part 1: Design, synthesis, and characterization of osmium complexes," *Proc. SPIE*, Vol 4800, 93-104 (2003).
13. B. Domerq, R. D. Hreha, N. Larribeau, J. N. Haddock, S. R. Marder, B. Kippelen, "Photocrosslinkable polymers as hole-transport materials for organic light-emitting diodes," *SPIE-The International Society for Optical Engineering*, Vol 4642, 88-96 (2003).
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15. E. Zojer, D. Beljonne, J. L. Bredas, "Two-photon absorption in quadrupolar pi-conjugated molecules: Influence of the nature of the conjugated bridge and the donor-acceptor separation," *Chemistry - A European Journal*, (2003). *In Press*
16. S. Keinan, E. Zojer, J. L. Bredas, M. A. Ratner, T. J. Marks, "Twisted pi-System Electro-Optic Chromophores - CIS vs. MRD-CI Theoretical Investigation," *THEOCHEM*, Vol 633, 227-235 (2003).
17. M. Halik, W. Wenseleers, C. Grasso, F. Stellacci, E. Zojer, S. Barlow, J. L. Bredas, J. W. Perry, S. R. Marder, "Bis(dioxaborine) Compounds with Large Two-Photon Cross Sections, and Their Use in the Photodeposition of Silver," *Chemical Communications*, Vol 13, 1490-1491 (2003).
18. K. Firestone, P. J. Last, L. R. Dalton, "Methods for the Rejection of Resonant and non-Resonant Fluorescence in Hyper Rayleigh Scattering Measurements," *Applied Spectroscopy*, (2003). *In Preparation*
19. Prezhdo, C. Brooksby, "Prezhdo and Brooksby Reply," Vol 90, 118902 (2003).
20. W. Stier, W. Duncan, O. Prezhdo, "Ab initio molecular dynamics of ultrafast electron injection from molecular donors to the TiO₂ acceptor," *SPIE proceedings*, (2003).

21. Prezhdo, C. Brooksby, "Non-adiabatic molecular dynamics: Quantum solvent effects," *Advanced Topics in Theoretical Chemical Physics*, 339-361 (2003).

2. PRESENTATIONS

a. Conferences

Conference-- July 30, 2004 Rigoberto Hernandez, Invited Talk, 3rd Annual MERCURY conference on Undergraduate Researches, Clinton, NY, "Directed transport along 2-dimensional stochastic surfaces."

Conference-- July 22, 2004 Rigoberto Hernandez, Invited Talk, Telluride Workshop on Condensed Phase Dynamics, Telluride, CO, "Directed transport along 2-dimensional stochastic surfaces."

Conference-- July 19-23, 2004 Oleg Prezhdo, Invited Talk, Telluride Summer Research Center, National Workshop on Condensed Phase Dynamics, Telluride, CO.

Conference-- June 27, 2004 -July 2, 2004 Larry Dalton, Invited Talk, 2004 Integrated Photonics Research--Optical Society of America, San Francisco, California, "Electro-Optic Materials and Devices for Integrated Photonics."

Conference-- June 14-18, 2004 Larry Dalton, Invited Talk, 6th International Symposium on Functional Pi-Electron Materials, Cornell University, "Rational Design of Exceptional Organic Electro-Optic Materials."

Conference-- June 7-10, 2004 Larry Dalton, Invited Talk, SPIE Midwest Regional Meeting, Cleveland, Ohio, Next Generation Electro-Optic Materials by Rational Design."

Conference-- May 30, 2004-June 4, 2004 Oleg Prezhdo, Invited Talk, 3rd International Conference on Computational Modeling and Simulation of Materials, Acireale, Sicily, Italy.

Conference-- May 20-24, 2004 Larry Dalton, Invited Talk, Fragrant Hill Symposium, Beijing, People's Republic of China, "The Role of Electro-Optics in the Information Technology Revolution."

Conference-- May 21, 2004 Rigoberto Hernandez, Invited Talk, Southeastern Theoretical Chemistry Association Meeting, Oxford, MS, "Directed transport along 2-dimensional stochastic surfaces."

Conference-- May 17-21, 2004 Oleg Prezhdo, Invited Talk, 24th Annual Conference on Statistical Physics of Macromolecules, Santa Fe, NM.

Conference-- May 9-13, 2004 Oleg Prezhdo, Invited Talk, 205th National Meeting of the Electrochemical Society, San Antonio, TX.

Conference-- May 1, 2004 Rigoberto Hernandez, Invited Talk, Symposium on Application of Computation to the Materials Sciences and Biology, Emory University, Atlanta, GA, "The role of the environment in dense polymerization, protein motion and binding."

Conference-- April 21-23, 2004 Larry Dalton, Invited Talk, DARPA Molecular Photonics (MORPH) Review, China Lake Naval Weapons Center, "Organic Electro-Optic Materials & Devices: An Overview."

Conference-- April 15, 2004 Larry Dalton, Invited Talk, Materials Research Society National Meeting, Symposium L: New Materials for Microphotonics, San Francisco, "Integrated Optics/Electronics Using Electro-Optic Polymers."

Conference-- April 1, 2004 Rigoberto Hernandez, Invited Talk, ACS Spring Meeting, Anaheim, CA, "Multiple-timescale classical dissipative dynamics on stochastic surfaces."

Conference-- April 2004 Masud Mansuripur, Invited Talk, Optical Data Storage Conference, Monterey, CA, "Macro-molecular data storage with petabyte/cm³ density, highly parallel read/write operations, and genuine 3D storage capability."

Conference-- March 28, 2004-April 1, 2004 Yanyi Huang, 227th ACS National Meeting, Anaheim, California, "Polymer Microring Integrated Optical Devices."

Conference-- March 28, 2004 -April 1, 2004 Oleg Prezhdo, Invited Talk, National Meeting of the American Chemical Society, Anaheim, CA, "Symposium on Mixed Quantum, Classical and Semiclassical Dynamics."

Conference-- March 22-26, 2004 Sumitendra Mazumdar, Annual Meeting of the American Physical Society, Montreal, Canada, "DMRG Study of π -Conjugated Polymers with Additional π -Conjugation in the Transverse Direction."

Conference-- March 15-18, 2004 Larry Dalton, Invited Talk, GOMACTech-04: Transformational Technologies, Hyatt Regency Monterey, California, "Toward Practical Sub-1 Volt, High Bandwidth, Stable Electro-Optic Modulators."

Conference-- March 6-9, 2004 L. Andrew Lyon, Invited Talk, Particles 2004, Orlando, FL, "Soft Nanoparticle Assemblies."

Conference-- March 6, 2004 Natia Frank, Invited Talk, 9th Annual Maria Goeppert-Mayer Interdisciplinary Symposium, San Diego Supercomputer Center, "Multifunctional Magnetic Materials."

Conference-- February 12-16, 2004 Larry Dalton, Invited Talk, American Association for the Advancement of Science Annual Meeting, Seattle, Washington, "Topical Lecture: Electro-Optics for Next Generation Information Technology, Sensing, and Defense Applications."

Conference-- February 12-16, 2004 Larry Dalton, Invited Talk, American Association for the Advancement of Science Annual Meeting, Seattle, Washington, "An Overview of 21st Century Photonics."

Conference-- February 8, 2004 Axel Scherer, Invited Talk, AAAS meeting, Seattle, Washington, "Plasmons and photonic crystals for the concentration of light."

Conference-- February 2004 Michal Lipson, American Association for the Advancement of Science, Seattle, WA.

Conference-- January 27-29, 2004 Larry Dalton, Invited Talk, NNI Interagency Workshop: Instrumentation and Metrology for Nanotechnology Grand Challenges Workshop, Gaithersburg, Maryland, "Rational Design and Characterization of Nanostructured Ferroelectric Lattices."

Conference-- January 21-23, 2004 Larry Dalton, Invited Talk, Photonics and Imaging Initiatives Workshop, Tucson, Arizona, "Organic Electro-Optic Materials and Devices: Progress Toward Low Power, High Bandwidth Practical Devices."

Conference-- January 12-13, 2004 Neal Armstrong, Invited Talk, Proposition 301 Photonics Workshop/Tutorials, Tucson, Arizona, "Organic Light Emitting Diodes and Organic Solar Cells."

Conference-- January 5-9, 2004 Roni Kopelman, Invited Talk, 9th Joint MMM/INTERMAG Conference, Anaheim, CA, "New Advances in Molecular Bistability: Incorporation of Organic Photochromes into Magnetic Materials."

Conference-- December 8-9, 2003 Jean-Luc Brédas, Invited Talk, Symposium on TRANSATLANTIC MOBILITY OF RESEARCHERS: New Opportunity for Career Development and EU/US Cooperation in Science and Technology, Washington, DC, "TRANSATLANTIC MOBILITY OF RESEARCHERS: From brain drain to mutual benefit."

Conference-- December 1-4, 2003 Neal Armstrong, Invited Talk, Materials Research Society, Boston, MA, "The Role of ITO Surface Pre-treatments in OLED and PV Performance: Control of Electronically Active Surface Area and Enhancement of Charge Injection Rates."

Conference-- December 1-4, 2003 Neal Armstrong, Materials Research Society, Boston, MA, "Probing Electrochemical Models for Organic Light-Emitting Diodes with Quinacridone Dendrimers and Near-IR Dopants."

Conference-- December 1-4, 2003 Neal Armstrong, Invited Talk, Materials Research Society, Boston, MA, "Interface Modification of ITO Thin Films: Organic Photo-voltaic Cells."

Conference-- December 1, 2003 -December 5, 2003 Joseph Perry, Invited Talk, Symposium M: Nontraditional Approaches to Patterning, Materials Research Society Fall Meeting, Boston, MA, "Two-Photon 3D Lithography: Materials and Applications."

Conference-- November 18, 2003 Rigoberto Hernandez, Invited Talk, SERMACS 2003, Atlanta, GA, "Nonstationary activated dynamics on stochastic surfaces."

Conference-- November 16-19, 2003 Chad Risko, 55th Southeast Regional Meeting of the American Chemical Society, Atlanta, Georgia, "Phenylene-vinylene-bridged bis(triarylamine) mixed compounds: a joint experimental and theoretical investigation."

Conference-- November 16-19, 2003 Jean-Luc Brédas, Invited Talk, 55th SouthEast Regional Meeting of the American Chemical Society, Atlanta, Georgia, "Charge Transport and Charge Recombination Processes in organic Semiconductors."

Conference-- November 16-19, 2003 Bilal Kaafarani, 55th Southeast Regional Meeting of the American Chemical Society, Atlanta, GA, United States, "New hexaazatrinaphthylenes as electron-transport materials."

Conference-- November 13, 2003 Jean-Luc Brédas, Invited Talk, Optics in the SouthEast 2003 Symposium of the Optical Society of America, Orlando, Florida, "Charge Transport and Charge Recombination Processes in Organic Semiconductors."

Conference-- November 12, 2003 -November 13, 2003 Joseph Perry, Invited Talk, Optics in the Southeast (OISE) Conference, University of Central Florida, Orlando, FL, "Two-Photon 3D Lithography: Materials and Applications."

Conference-- November 3, 2003 Jean-Luc Brédas, Invited Talk, AVS 50th International Symposium 2003, Baltimore, Maryland, "Characterization of Organic-Metal and Organic-Organic Interfaces."

Conference-- November 2003 Masud Mansuripur, Chemical and Biochemical Sensors Workshop, Tucson, AZ, "Macromolecular Data Storage."

Conference-- October 27-30, 2003 William Steier, Invited Talk, LEOS 2003, Tucson, AZ, "Advances in Polymer Waveguide Devices."

Conference-- October 18-25, 2003 Larry Dalton, Invited Talk, The Enrico Fermi and Galileo Galilei Celebrations, International School of Quantum Electronics, Erice, Sicily, "Microresonators as Building Blocks for VLSI Photonics."

Conference-- October 10, 2003 Neal Armstrong, Invited Talk, Kodak/Rochester ACS Symposium on Self-Assembly, Rochester, New York, "Disks to Rods: Self-Organization of Discotic Mesophase Materials into Coherent Rod-Like Aggregates with Interesting Electrical Properties."

Conference-- October 7-9, 2003 Jean-Luc Brédas, Invited Talk, 2003 Frontiers in Optics Symposium of the Optical Society of America, Tucson, Arizona, "Charge Transport and Charge Recombination Processes in Organic Semiconductors."

Conference-- October 6-9, 2003 Enai Yasufumi, 85th Optical Society of America Annual Meeting, ThGG3 (2003), Tucson, AZ, "Hybrid electro-optic polymer/selectively-buried sol-gel waveguides and optical modulation."

Conference-- October 1-2, 2003 Jean-Luc Brédas, Invited Talk, International Symposium on Organic Power Limiting (ISOPL3), Sedona, Arizona, "Two-photon absorption in pi-conjugated molecules: Influence of ground-state polarization and nature of the conjugated backbone."

Conference-- September 30, 2003 -October 3, 2003 Oleg Prezhdo, Invited Talk, International Conference on Chemistry of Nitrogen Containing Heterocycles, Kharkov, Ukraine, "Non-Adiabatic Molecular Dynamics Study of Fluorescence Yield and Quenching in Green Fluorescent Protein and Solution."

Conference-- September 21-26, 2003 Natia Frank, Invited Talk, The Fifth International Symposium on Crystalline Organic Metals, Superconductors and Ferromagnets, Port-Bourgenay, France, "Organic Delocalized Radicals for Magnetic Materials-Poster."

Conference-- September 21-25, 2003 Larry Dalton, Invited Talk, 29th European Conference on Optical Communication/14th International Conference on Integrated Optics and Optical Fibre Communication, Rimini, Italy, "Novel Polymer-Based, High-Speed Electro-Optic Devices."

Conference-- September 16-17, 2003 Jean-Luc Brédas, Invited Talk, 11th Conference on Unconventional Photo-active Systems (UPS), Leuven, Belgium, "Charge Transport and Energy Transfer in Organic Semiconducting Polymers and Oligomers."

Conference—September 15-17, 2003 Jean-Luc Brédas, Invited Talk, Centre Europeen de Calcul Atomique et Moleculaire (CECAM) workshop in Modelling Electronic Processes in Molecular Scale Devices, Lyon, France, "Two-photon absorption in pi-conjugated molecules: influence of ground-state polarization and nature of the conjugated backbone."

Conference-- September 15-17, 2003 Sumitendra Mazumdar, Invited Talk, Modeling Electronic Processes in Molecular Scale Devices, Lyon, France, "Electron correlations and the spin dependence of the electron-hole recombination reaction in organic light emitting diodes."

Conference-- September 15-17, 2003 Oleg Prezhdo, Invited Talk, International Workshop on Modeling of Electronic Processes in Molecular Scale Devices, Lyon, France, "Non-Adiabatic Ab Initio Molecular Dynamics of the Ultrafast Solar Cell Electron Transfer."

Conference-- September 7-11, 2003 Oleg Prezhdo, Invited Talk, National Meeting of the American Chemical Society, Symposium on The Conduction Band in Liquids and Disordered Solids, New York City, "Non-Adiabatic Ab Initio Molecular Dynamics of the Ultrafast Solar Cell Electron Transfer."

Conference-- September 7-11, 2003 Christopher Tonzola, ACS, New York, "New Soluble Polyquinolines for Optoelectronics."

Conference-- September 2003 Robert Dickson, Invited Talk, Leuven, Belgium, "Unconventional Photoactive Systems: UPS '03."

Conference-- September 2003 Bernard Kippelen, ICONO'7, Korea, "Efficient Third Harmonic Generation in Organic Thin Films and Its Applications."

Conference-- September 2003 Bernard Kippelen, Invited Talk, 7th International Symposium on Polymers for Advanced Technologies, Ft. Lauderdale, FL, "Recent Advances in Photorefractive and Third-order Nonlinear Polymers."

Conference-- August 29, 2003 Joseph Perry, Invited Talk, The 3rd Annual Southeast Multiphoton Excitation User Group Meeting and Workshop, Emory University, Atlanta, GA, "Design and Application of Two-Photon Absorbing Conjugated Organic Molecules."

Conference-- August 14, 2003 Joseph Perry, Invited Talk, Excited State Processes in Electronic and Bionanomaterials, Los Alamos National Laboratory, Los Alamos, NM, "Two-Photon Properties of Conjugated Organic Molecules and Nanocomposites."

Conference-- August 10-15, 2003 Larry Dalton, Invited Talk, 39th IUPAC Congress and 86th Conference of the Canadian Society of Chemistry, Symposium MS05-Polymers in Electronics and Photonics, Ottawa, Canada, "Organic Electro-Optic Materials."

Conference-- August 10-14, 2003 Natia Frank, Invited Talk, NSF Workshop on Physical Organic Chemistry (Organic Chemical Dynamics), Newport, RI, "Organic Spintronic Materials."

Conference-- August 3-8, 2003 Oleg Prezhdo, Invited Talk, The International Society for Optical Engineering (SPIE), International Symposium on Optical Science and Technology, San Diego, CA, "Non-Adiabatic Molecular Dynamics of the Ultrafast Solar Cell Electron Transfer."

Conference-- August 2003 Robert Dickson, Invited Talk, SPIE Annual Meeting, San Diego, CA, "Physical Chemistry of Interfaces and Nanomaterials II."

Conference-- August 2003 Bernard Kippelen, SPIE Annual Meeting, San Diego, CA, "Broadband Efficient Third-Harmonic Generation in Organic Films."

Conference-- August 2003 Bernard Kippelen, SPIE Annual Meeting, San Diego, CA, "Organic Light-emitting Diodes Based on Arylamine Molecules and Polymers with a Fluorene Core."

Conference-- August 2003 Bernard Kippelen, SPIE Annual Meeting, San Diego, CA, "Organic Photovoltaic Cells Containing Discotic Liquid Crystalline Phthalocyanines."

Conference-- August 2003 Bernard Kippelen, SPIE Annual Meeting, San Diego, CA, "Efficient Photorefractive Polymers Sensitized by CdSe Nanoparticles."

Conference-- August 2003 Bernard Kippelen, Invited Talk, SPIE Annual Meeting, San Diego, CA, "Semiconducting Liquid Crystals and Their Application in Organic Solar Cells."

Conference-- August 2003 Bernard Kippelen, SPIE Annual Meeting, San Diego, CA, "Photorefractive Polymers Based on Bis-triarylamine Side Chain Polymers."

b. Seminars

Seminar-- May 31, 2004-June 4, 2004 Larry Dalton, Invited Talk, Sensor Science Technology, Alabama A&M University, "Sensor Science & Technology."

Seminar-- April 28, 2004 L. Andrew Lyon, Invited Talk, Departmental Colloquium, University of California-Riverside, Department of Chemistry, "Hydrogel Nanoparticles-Design and Assembly."

Seminar-- April 27, 2004 Larry Dalton, Invited Talk, Chemistry Department Seminar, University of California at Irvine, "The Chemistry of Information Technology: New Materials by Rational Design."

Seminar-- April 19, 2004 Dominic McGrath, Invited Talk, University of Florida, "Dendrimer Disassembly: Strategies and Applications."

Seminar-- April 19, 2004 L. Andrew Lyon, Invited Talk, Departmental Colloquium, Washington State University, Department of Chemistry, "Equilibrium and Non-Equilibrium States in Hydrogel Assemblies."

Seminar-- March 15, 2004 Joseph Perry, Invited Talk, Nanobiotechnology Center Seminar Series, Cornell University, Ithaca, NY, "Two-Photon Absorbing Materials for 3D Microfabrication, Sensing and Imaging."

Seminar-- February 18, 2004 L. Andrew Lyon, Invited Talk, Departmental Colloquium, Johns Hopkins University, Department of Materials Science, Baltimore, MD, "Colloidal Hydrogel Assemblies."

Seminar—February 4, 2004 Ann Mescher, Invited Talk, Applied Physics Laboratory Seminars, Applied Physics Laboratory, Seattle, WA.

Seminar-- January 28-30, 2004 Natia Frank, Department of Chemistry, Georgia Institute of Technology, Atlanta, GA, "Multifunctional Magnetic Materials."

Seminar-- January 22, 2004 L. Andrew Lyon, Invited Talk, Departmental Colloquium, University of Pittsburgh, Department of Chemistry, "Exploring and Exploiting Colloidal Hydrogels."

Seminar-- January 15, 2004 L. Michael Hayden, Invited Talk, US Naval Research Laboratory, "Optical rectification and electro-optic sampling in the THz regime using electro-optic polymers."

Seminar-- January 12-14, 2004 Natia Frank, Invited Talk, Department of Chemistry, University of Victoria, Victoria, BC, Canada, "Multifunctional Magnetic Materials."

Seminar-- January 12, 2004 Oleg Prezhdo, Invited Talk, Center for Nonlinear Studies, Los Alamos National Laboratory.

Seminar-- December 5, 2003 Larry Dalton, Invited Talk, Science and Engineering Business Association/Chemistry Graduate Student Club Lecture, University of Washington, "21st Century Information Technology--Exploiting the Best of Electronics and Photonics While Staying Profitable."

Seminar-- November 15, 2003 L. Michael Hayden, Invited Talk, Johns Hopkins University, Materials Science Dept, "Optical rectification and electro-optic sampling in the THz regime using electro-optic polymers."

Seminar-- November 7, 2003 Dominic McGrath, Invited Talk, University of Rochester, "Strategies for and Implications of Dendrimer Degradation."

Seminar-- November 6, 2003 Oleg Prezhdo, Invited Talk, Department of Chemistry, Yale University, "Theoretical studies of electro-optic materials and solar cells."

Seminar-- November 5, 2003 Oleg Prezhdo, Invited Talk, Department of Chemistry, Brown University, "Theoretical studies of electro-optic materials and solar cells."

Seminar-- November 4, 2003 Robert Dickson, Invited Talk, Yale University, Chemistry Department.

Seminar-- November 4, 2003 Oleg Prezhdo, Invited Talk, Department of Chemistry, Massachusetts Institute of Technology, "Theoretical studies of electro-optic materials and solar cells."

Seminar-- October 31, 2003 Robert Dickson, Invited Talk, Duke University, Chemistry Department.

Seminar-- October 20, 2003 Natia Frank, Invited Talk, Department of Chemical Engineering, University of Washington, Seattle, WA, "Multifunctional Magnetic Materials."

Seminar-- October 15, 2003 Natia Frank, Invited Talk, Simon Fraser University, Burnaby, BC, Canada, "Multifunctional Magnetic Materials."

Seminar-- October 14, 2003 Natia Frank, Invited Talk, ACS PROGRESS Lectureship in Chemical Sciences, Department of Chemistry, University of Idaho, Moscow, ID, "Multifunctional Magnetic Materials."

Seminar-- September 22, 2003 Robert Dickson, Invited Talk, Emory University, Chemistry Department.

Seminar-- September 17, 2003 Masud Mansuripur, Invited Talk, Invited Seminar at Philips Research Laboratories, Eindhoven, The Netherlands, "Information Storage and Retrieval using Macro-molecules as Storage Media."

Seminar-- September 15, 2003 L. Michael Hayden, Invited Talk, Laboratory for Physical Sciences, College Park, MD, "Optical rectification and electro-optic sampling in the THz regime using electro-optic polymers."

Seminar-- August 18, 2003 Oleg Prezhdo, Invited Talk, Departement Physique et Modelisation, Universite d'Evry, France, "3. Studies of optical materials: theory and applications to solar cells and electro-optic switches."

c. Lectures or Special Classes

University Class-- May 4, 2004 Larry Dalton, Invited Talk, Frontiers in Nanotechnology BIOE 599L & CHEM 560D, Bagley Hall 261, University of Washington, "Nanophotonics."

Lecture-- March 25, 2004 -March 26, 2004 Larry Dalton, Invited Talk, DDR&E MURI Review of Polymeric Smart Skin Materials, University of Washington, "An Overview of Polymeric Smart Skin Materials."

Lecture-- March 25, 2004 Neal Armstrong, Invited Talk, Meeting of the Greater Tucson Economic Council -- Nanotechnology Cluster, University of Arizona, "Nanoscience/Nanotechnology -- What Is It?"

Lecture-- February 10, 2004 Robert Dickson, Invited Talk, University of Minnesota, "Chemical Engineering and Materials Science."

Lecture-- February 5, 2004 Larry Dalton, Invited Talk, Howard Hughes Undergraduate Research and Biology Fellows Program, University of Washington School of Medicine, "Why I Chose My Career."

Lecture-- January 13-14, 2004 Larry Dalton, Invited Talk, DDR&E Nanophotonics and Nanoelectronics DURINT Review, University at Buffalo/SUNY, "Nanophotonic Electro-Optic and Opto-Electronic Materials."

University Class-- December 5, 2003 Larry Dalton, Invited Talk, Electrical Engineering Research Seminar EE592, University of Washington, "21st Century Information Technology."

Lecture-- December 5, 2003 Robert Dickson, Invited Talk, National Sun Yat Sen University, Optoelectronics Department, KoaHsiung, Taiwan.

Lecture-- December 4, 2003 Robert Dickson, Invited Talk, Institute of Chemistry, Academia Sinica, Taipei, Taiwan.

Lecture-- December 2, 2003 Robert Dickson, Invited Talk, National Taiwan University/Institute of Atomic and Molecular Sciences, Academia Sinica, Taipei, Taiwan.

Lecture-- November 25, 2003 Robert Dickson, Invited Talk, University of California San Diego, Chemistry Department.

University Class-- November 6, 2003 Natia Frank, Invited Talk, Department of Chemistry, Central Washington University, Ellensburg, WA, "Multifunctional Magnetic Materials."

Lecture-- November 4, 2003 Larry Dalton, Invited Talk, Eastman Lectureship, University of Akron, "The Chemistry of Information Technology."

3. OTHER DISSEMINATION ACTIVITIES

a. Review/Advisory Panels

Type of Activity: DoE PNNL Energy Science & Technology Directorate Review Committee

Description: Site visit review of the PNNL ESTD

People Involved: Larry R. Dalton

Location: Pacific Northwest National Laboratory, Richland, WA

Date: April 12-14, 2004

Type of Activity: NSF Panel Reviewer

Description: National Science Foundation Division of Elementary, Secondary, and Informal Education - Information Technology Experiences for Students and Teachers (ITEST) Panel

People Involved: Carmen Sidbury

Location: Washington, DC

Date: March 10 -12, 2004

Type of Activity: Advisory Panel Meeting

Description: Strategic Advisory Board of the Center for Research and Education in Advanced Materials, Norfolk State University

People Involved: Larry R. Dalton

Location: Norfolk State University, Norfolk, Virginia

Date: November 11-12, 2003

Comments: The CREAM is a NASA-funded Research Center

Type of Activity: Air Force Scientific Advisory Board

Description: Review of the AFRL Materials & Manufacturing Directorate

People Involved: Larry R. Dalton

Location: Wright Patterson Air Force Base, Dayton, Ohio

Date: October 26-31, 2003

b. Journal Editorship

Editor- First Name: Charles

Editor- Last Name: Campbell

Journal Name: Surface Science

Period: Jan. 2002 - Present

Status: Editor

Editor- First Name: Larry

Editor- Last Name: Dalton

Journal Name: The Journal of Physical Chemistry

Period: Special Issue (2003-2004)

Status: Editor

Editor- First Name: Larry

Editor- Last Name: Dalton

Journal Name: Materials Today

Period: 2003

Status: Advisory Board Member

c. Education/Outreach (see chapters III and VI)

d. Other

Type of Activity: Goizueta Foundation Jr. Chair at GaTech

Description: Recruiting, retention, and promotion of latino students in STEM

People Involved: Rigoberto Hernandez

Location: GaTech, Atlanta, GA

Date: October 2002 - June 2006

Type of Activity: Lecture and Laboratory Demonstrations
Description: Tour of and Introduction to the NSF-STC-MDITR
People Involved: Larry Dalton and Students Participating in the NASA Space Grant Consortium
Location: University of Washington
Date: March 1, 2004
Comments: Outreach to High School and College Students

Type of Activity: Industrial Outreach
Description: Briefed the top advisor for technology of the French Minister of Research and New Technologies
People Involved: B. Kippelen
Location: Georgia Tech (Atlanta, GA)
Date: February 24, 2004

Type of Activity: Special Orientation Program for Incoming Transfer Students at the University of Washington
Description: A one day mentoring program for transfer students to acquaint them with opportunities at the University of Washington
People Involved: Larry Dalton and Philip Reid and Transfer Students
Location: Mary Gates Hall
Date: January 4, 2004
Comments: This is a special program organized by Dean of Undergraduate Education Dr. George Bridges. It is an important step in improving the mentoring of undergraduate students.

Type of Activity: Server Administration
Description: FTP configuration
People Involved: Mike Bruck, Melody Griego
Location: University of Arizona
Date: December 15, 2003
Comments: FTP access to Convex.STC.Arizona.EDU

Type of Activity: Directorship, Center for Nanotechnology
Description: Named Director of Center
People Involved: Charlie Campbell
Location: Univ. of Washington
Date: December 1, 2003

Type of Activity: Conference Organization
Description: Program Co-chair, ILS Annual Meeting
People Involved: B. Kippelen
Location: Tucson, AZ
Date: October 2003

Type of Activity: University of Washington Special Orientation Program for Incoming Freshman
Description: Introduction of incoming freshman to unique programs at the University of Washington

People Involved: Larry Dalton and Philip Reid and Incoming Freshman Students

Location: Bagley Hall, University of Washington

Date: September 26, 2003

Comments: This is a special program organized by the Dean of Undergraduate Education, Dr. George Bridges. It is a first important step in improving the mentoring of undergraduates.

Type of Activity: Symposium

Description: International Symposium on Optical Science and Technology, SPIE's 48th Annual Meeting

People Involved: Oleg Prezhdo

Location: San Diego, California

Date: August 3-8, 2003

Comments: Session Chair

Type of Activity: Conference Organization

Description: Member of the Program Committee, SPIE Conference, "Organic Holographic Materials and Applications"

People Involved: B. Kippelen

Date: Summer 2003

4. AWARDS AND OTHER HONORS

	Recipient	Reason for Award	Award Name and Sponsor	Date
1	Olah, George	Research excellence	2005 Priestly Award, American Chemical Society	2005
2	Prezhdo, Oleg	Research excellence	Max-Planck Fellowship, Institute for the Physics of Complex Systems, Dresden	2004-2005
3	Andrew, Trisha	Academic and research excellence	Mary Gates Scholar, Gates Foundation, University of Washington	2004
4	Firestone, Kimberly	Academic and research excellence	SPIE Scholarship Award, SPIE	2004
5	Kopelman, Roni	Invited talk at IEEE conference	IEEE Travel Award, IEEE	2004
6	Prezhdo, Oleg	Academic and research excellence	Professeur Invite, l'Université Pierre et Marie Curie	2004
7	Pyayt, Anna	Academic and research excellence	SPIE Scholarship Award, SPIE	2004

	Recipient	Reason for Award	Award Name and Sponsor	Date
8	Kopelman, Roni	Academic and research excellence	West Fellowship in Analytical Chemistry, University of Washington	2003-2004
9	Liu, Michelle	Support for collaboration research with PNNL in nanoscience	JIN Postdoctoral Fellowship, University of Washington/Pacific Northwest National Laboratory (UW/PNNL) Joint Institute for Nanoscience (JIN)	2003-2004
10	Andrew, Trisha	Academic excellence in Organic Chemistry	Dauben Award in Organic Chemistry, Chemistry Department at the University of Washington	2003
11	Andrew, Trisha	Academic and research excellence	Zahlia-Jencks-Rowe Scholarship in Chemistry, Department of Chemistry at the University of Washington	2003
12	Brédas, Jean-Luc	Honorary Professor, Institute of Chemistry of the Chinese Academy of Sciences in Beijing	Chemistry of the Chinese Academy of Sciences	2003
13	Brédas, Jean-Luc	Descartes Prize of the European Commission	European Commission	2003
14	Brédas, Jean-Luc	Inclusion in the list of the ISI Highly Cited Researchers for Chemistry	ISI	2003
15	Brédas, Jean-Luc	Fellow of the Optical Society of America	Optical Society of America	2003
16	Campbell, Charles	Research Excellence	Alexander Von Humboldt Research Award, Alexander Von Humboldt Foundation	2003
17	Dalton, Larry	Recognition of research contributions to the field of polymer chemistry	Eastman Lectureship, University of Akron-Eastman Chemical Company	2003
18	Diaz, Steven	Research Excellence	Rabinovitch Award, Chemistry Department at the University of Washington	2003
19	Dickson, Robert	Taiwan, Visiting Lecturer	National Science Council, National Science Council	2003

	Recipient	Reason for Award	Award Name and Sponsor	Date
20	Kopelman, Roni	Academic and research excellence	Berkelhammer Book Award, University of Washington	2003
21	Lyon, Andrew	Instructional and research excellence	Camille Dreyfus Teacher-Scholar Award, Camille and Henry Dreyfus Foundation	2003
22	Macrae, Michael	Academic excellence and financial need	Robinson Award in Chemistry 2003, Chemistry Department at the University of Washington	2003
23	Marder, Seth	Lifetime professional accomplishments	Elected Fellow, American Association for the Advancement of Science	2003
24	Zojer, Egbert	Scientific studies on organic semiconductors described in Dr. Zojer's Habilitation presented to the Graz University of Technology	Research Award for Nanosciences and Nanotechnologies of the State of Styria	2003
25	Brédas, Jean-Luc	Member of the European Research Advisory Board for Science, Technology, and Innovation	Commissioner for Research of the European Union	2001-Present

5. CENTER GRADUATES

Graduate Students

	Student Name	Deg Inst.	Deg.							Placement
1	Ajo, Henry	UW	Ph.D.							Post Doc at University of Minnesota-Twin Cities.
2	Carlson, Brenden	UW	Ph.D.							Senior Chemist at Isotron Corp. in Seattle, WA. Affiliate Faculty at University of Washington.
3	Case, Patrick	USC	Ph.D.							Industry: Calhoun, Inc. in Pasadena, CA.
4	Donley, Carrie	UA	Ph.D.							Post Doc at Cambridge University.
5	Fifield, Leo	UW	Ph.D.							Post Doc in the Advanced Processing and Applications Group in the Process Science and Engineering Division of the Environmental Technology Directorate at PNNL.
6	George, Candace	UA	BS							Attending Medical School.
7	Gordon, Joshua	UA	BS							Graduate student in the Optical Sciences Center at the University of Arizona.
8	Herguth, Petra	UW	Ph.D.							Post Doc at University of California, San Diego.
9	Hreha, Richard	UA	Ph.D.							President Cornerstone Research Group, Inc. in Dayton, OH.
10	Lee, Susan	UW	BS							Attending Columbia University, School of Dentistry.
11	Liu, Michelle	UW	Ph.D.							Post Doc at University of Washington.
12	Loncar, Marko	CIT	Ph.D.							Post Doc at Harvard University.
13	Lu, Yu	UW	Ph.D.							Post Doc at Nanomix in California.
14	Mayers, Brian	UW	Ph.D.							Post Doc at Harvard University.
15	Moilanen, David	UW	BS							Will be attending Stanford Graduate Program.
16	Mookherjea, Shayan	CIT	Ph.D.							Assistant Professor of Electrical and Computer Engineering at the University of California, San Diego.
17	Padmaperum, Asanga	USC	Ph.D.							Post Doc at Pacific Northwest National Laboratory in Richland, WA.

	Student Name	Deg Inst.	Deg.							Placement
18	Phelan, Greg	UW	Ph.D.							Asst. Professor of Chemistry at Seattle Pacific University. Affiliate Professor of Chemistry at the University of Washington.
19	Rabiei, P.	USC	Ph.D.							Post Doc at ETH in Zurich, Switzerland.
20	Ramos-Ortiz, Gabriel	UA	Ph.D.							Scientist at the Center for Investigations in Optics in Leon Guanajuato, Mexico.
21	Stier, William	UW	Ph.D.							Post Doc at University of Washington.
22	Tonzola, Christopher	UW	MS							Continuing towards Ph.D. at the University of Washington.
23	Wong, Sharon	UW	MS							Employee at Boeing.
24	Yang, Da	UA	Ph.D.							Post Doc at Cornell.
25	Zheng, Lixin	US	Ph.D.							Post Doc at University of California, Santa Barbara.

Post Docs

	Student Name	Inst.								Placement
1	Chen, Yu	UW								Professor at Fudan University in China.
2	Clot, Olivier	UW								Scientist position at the National Renewable Energy Laboratory
3	Giridhar, M.S.	UA								Scientist/Engineer at the Laboratory for Electro-Optic Systems of the Indian Space Research Organisation (ISRO) in Bangalore, India.
4	Kang, Seok Ho	UW								Research Scientist at Sumitomo Chemical.
5	Kim, Kyoung-soo	UW								Works at the Korea Institute of Science and Technology.
6	Li, Hongxiang	UW								Associate Research at the Institute of Chemistry, Chinese Academy of Science.
7	Liu, Tianjun	UW								Professor at the Institute of Biomedical Engineering, Chinese Academy of Medical Sciences.

6. LIST OF INSTITUTIONAL PARTNERS

	Organization Name	Org. Type*	Address	Contact Name	Type of Partner**	160 hrs or more?
1	Defense Advance Research Projects Agency	Federal govt	3701 N. Fairfax Drive, Arlington, VA 22203	Andy Hutchinson	Research, KT	Y
2	Air Force Research Laboratory (Wright-Patt, Rome, Kirtland)	Federal govt	AFRL/MLPS, 3005 Hobson Way, Bldg 651, WPAFB, OH 45433	Jim Grote	Research, KT	Y
3	Air Force Office of Scientific Research	Federal govt	4015 Wilson Blvd., Room 713, Arlington, VA 22203	Charles Lee	Research, KT	N
4	Office of Naval Research	Federal govt	ONR 331, Polymer Program 800 N. Quincy Street, Arlington, VA 22217	Paul Armistead	Research, KT	N
5	National Reconnaissance Office	Federal govt	14675 Lee Rd., Chantilly, VA 20151	Dennis Brown	Research, KT	Y
6	NASA-Glenn/Marshall	Federal govt	Mail Code SD40, Marshall Space Flight Center, AL 35812	Donald Frazier	Research, KT	Y
7	Missile Defense Agency	Federal govt	4015 Wilson Blvd., Room 713, Arlington, VA 22203	Charles Lee	Research, KT	N
8	Redstone Arsenal	Federal govt	Amsrd-amr-ws-id, Redstone Arsenal, AL 35898	Paul Ashley	Research, KT	Y
9	Naval Weapons Research Center at China Lake	Federal govt	Code 4T42200D, Bldg 5: Room 1610, China Lake, CA 93555	Geoff Lindsay	Research, KT	Y
10	National Renewable Energy Laboratory	Federal govt	1617 Cole Boulevard, Golden, CO 80401	Olivier Clot	Research, KT	N
11	Pacific Northwest National Laboratory	National lab	P.O. Box 999/K3-59, Richland, WA 99352	Paul Burrows	Research, KT	Y
12	Battelle Memorial Inst.	NGO	4500 Sand Point Way NE, Suite 100, Seattle, WA 98105	Ruth Ann Mullen	KT	Y
13	Center for Research Learning	Company	15007 61 st Drive SE, Snohomish, WA 98296	Laura Collins	Education	N

	Organization Name	Org. Type*	Address	Contact Name	Type of Partner**	160 hrs or more?
14	Fujitsu Corp	Company	3811 Zanker Road, San Jose, CA 95134	Michael Lee	KT, Research	Y
15	Boeing Corp.	Company	P.O. Box 3707 M/S 3W-51, Seattle, WA 98124	William Krug	KT, Research	Y
16	Eastman Chemical Company	Company	P.O. Box 1972, Kingsport, TN 37662	Brian King	KT, Research	Y
17	Ford Motor Company	Company	Mail Drop #555, Prod. Dev. Ctr., P.O. Box 2110, Dearborn , MI 48124	Lisa Klein	KT, Research	Y
18	Lockheed-Martin Corp.	Company	O/L 921, B/204 Palo Alto, CA 94304	Susan Ermer	KT, Research	Y
19	Lumera	Company	19910 N Creek Pkwy, Bothell WA 98011	Tom Mino	Research, KT	Y
20	Intel	Company	350 E. Plumeria Dr. San Jose, CA 95134	Mike Morse	KT, Research	Y
21	Focal Point Microsystems	Company	315 Ferst St., Suite L1324, Atlanta, GA 30332	Alex Mautner	Research, KT	Y
22	MicroCoating Technologies	Company	5315 Peachtree Industrial Blvd., Chamblee, GA 30341	Marvis White	Research, KT	Y
23	Agilent Technologies	Company	3500 Deer Creek Road, MS 26M-10, Palo Alto, CA 94304	Waguih Ishak	Research, KT	Y
24	Corning	Company	SP-FR-06-01, Corning, NY 14831	Ming qian He	Research, KT	Y
25	IPITEK	Company	2330 Faraday Ave., Carlsbad, CA 92008	James Bechtel	Research, KT	Y
26	DuPont	Company	100 Fordham Road, Wilmington, MA 01887	Chuck Xu	Research, KT	Y
27	Durel Corporation	Company	2225 W. Chandler Blvd., Chandler, AZ 85224	Walt Paciorek	Research, KT	N
28	LumoFlex, LLC	Company	315 Ferst St., Suite L1324, Atlanta, GA 30332	Alex Mautner	Research, KT	N

	Organization Name	Org. Type*	Address	Contact Name	Type of Partner**	160 hrs or more?
29	Virtual Blue, LLC	Company	2233 Lake Park Dr., Suite 100, Smyrna, GA 30080	Bill Moultrie	Research, KT	N
30	Organic Lighting Technologies, LLC	Company	13009 Thome Valley Dr., Delvalle, TX 78617	Munisamy Anandan	Research, KT	N
31	Lintec Corporation	Company	45 Industrial Parkway, Wobrun, MA 01888	Leo Garcia	Research, KT	N

*Note: Does not include home institutions of SAB or EAC members.

7. SUMMARY TABLE

1	the number of participating institutions (all academic institutions that participate in activities at the Center)	7 Academic Institutions
2	the number of institutional partners (total number of non-academic participants, including industry, states, and other federal agencies, at the Center)	31 Institutional Partners
3	the total leveraged support (sum of funding for the Center from all sources <i>other</i> than NSF-STC)	\$27,385,831
4	the number of participants (total number of people who utilize center facilities; not just persons directly supported by NSF) . Please EXCLUDE affiliates (click for definition)	168 Participants

8. MEDIA PUBLICITY

In August 2003, MDITR was featured in a colorful 7-page article entitled ‘Photonics Powerhouse’ by Marita Graube. This article is reproduced in our public website with permission from Northwest Science & Technology Magazine, a publication of the University of Washington, Autumn 2003, pp 18-24.

Concurrent with the 2004 AAAS Meeting in Seattle, WA, MDITR scientists based at UW, GT, and Cornell announced three press releases that have reverberated through the internet. The original releases are found in Appendix E. Here are some related web links:

[Reference to UW release on “Breakthroughs in capacity, power consumption set to revolutionize photonics”](#)

- <http://www.washington.edu/newsroom/news/2004archive/02-04archive/k021304a.html>
- http://www.innovations-report.com/html/reports/materials_science/report-25836.html

- <http://www.spaceref.com/news/viewpr.html?pid=13678>
- http://www.eurekalert.org/pub_releases/2004-02/uow-bic021004.php
- <http://www.supercomputingonline.com/article.php?sid=5497>
- <http://www.spacedaily.com/news/materials-04i.html>
- <http://news.nanoapex.com/modules.php?name=News&file=article&sid=4286>
- http://www.innovations-report.com/html/reports/information_technology/report-25840.html

Reference to GT release on “3D fabrication technique uses light-activated molecules to create complex microstructures”

- <http://gtresearchnews.gatech.edu/newsrelease/3dmicrostructures.htm>
- <http://www.psigate.ac.uk/spotlight/issue16/key.html>
- http://www.eurekalert.org/pub_releases/2004-02/giot-3ft020404.php
- <http://news.nanoapex.com/modules.php?name=News&file=print&sid=4287>
- http://www.globaltechnoscan.com/18thFeb-2ndMarch04/fabrication_technique.htm
- <http://www.industryweek.com/CurrentArticles/Asp/articles.asp?ArticleId=1594>
- <http://optics.org/articles/news/10/2/23/1>
- <http://www.inovacaotecnologica.com.br/noticias/010160040319.html>

Reference to Cornell release on “Cornell-developed tools to guide and switch light could lead to photonic microchips and practical home fiber-optic lines”

- <http://www.news.cornell.edu/releases/Feb04/AAAS.Lipson.ws.html>
- http://www.innovations-report.com/html/reports/energy_engineering/report-25831.htm
- <http://www.globaltechnoscan.com/18thFeb>