Biographical Sketch: David L Shealy

Professor and Chair, Department of Physics and Director, IT Research Computing Support
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A. Professional Preparation

University of Georgia	Physics	Bachelor of Science, 1966
University of Georgia	Physics	Doctor of Philosophy, 1973

B. Appointments

1984-present, Professor and Chair, Department of Physics, University of Alabama at Birmingham
1997-present, Director of UAB IT Research Computing Services, 30% FTE
1980-1984, Staff Scientist, Principal Engineer, Semiconductor Laboratories, Motorola, Inc.
1976-1984, Associate Professor, Department of Physics, University of Alabama at Birmingham
1973-1976, Assistant Professor, Department of Physics, University of Alabama at Birmingham

C. Publications

i. List up to 5 publications related to the project

1. D. L. Shealy and J. A. Hoffnagle, "Wavefront and caustics of a plane wave refracted by an arbitrary surface," J. Opt. Soc. Am. A **25.9**, 2370-2382 (2008).
2. D. L. Shealy and J. A. Hoffnagle, "Laser beam shaping profiles and propagation," Appl. Opt. 45.21, 5118-5131, 2006.
3. D.L. Shealy and J. A. Hoffnagle, "Aspheric Optics for Laser Beam Shaping," in *Encyclopedia of Optical Engineering*, edited by Ron Driggers, DOI: 10.1081/E-EOE-120029768, ISBN: 0-8247-0940-3 (paper) 0-8247-0939-X (electronic), (Taylor & Francis, 2006).
4. D. L. Shealy, "Chapter 9: History of Beam Shaping," in *Laser Beam Shaping Applications*, edited by Fred M. Dickey, Scott C. Holswade and David L. Shealy, ISBN 0-8247-5941-9, CRC Press, Taylor & Francis Group, Boca Raton, FL, 2006, pp. 307-347.
5. D. L. Shealy, J. A. Hoffnagle and K-. H. Brenner, "Analytic beam shaping for flattened output irradiance profiles," in *Laser Beam Shaping VII*, edited by Fred M. Dickey and David L. Shealy, Proc. SPIE **6290,** 6290006-1-11, 2006.

ii. List of 5 other significant Publications

1. D. L. Shealy and J. H. Hoffnagle, "Beam shaping profiles and propagation," in *Laser Beam Shaping VI*, edited by Fred M. Dickey and David L. Shealy, Proceedings SPIE **5876:** OD1-11, 2005.
2. J. H. Hoffnagle and D. L. Shealy, "Effects if dispersion on the performance of a refractive beam shaper," in *Laser Beam Shaping VI*, edited by Fred M. Dickey and David L. Shealy, Proceedings SPIE **5876:** OG1-10, 2005.
3. D. L. Shealy and S-H Chao, "Design of GRIN laser beam shaper," in *Laser Beam Shaping V Conference*, edited by Fred M. Dickey and David L. Shealy, Proceedings SPIE **5525**, 138-147, 2004.
4. D. L. Shealy, "Optical design of laser beam shaping systems," in *International Optical Design Conference 2002*, edited by Jose Sasian and Paul K. Manhart, Proceedings SPIE **4832,** 344-358, 2002.
5. D.L. Shealy, "Chapter 4: Geometrical Methods," in *Laser Beam Shaping Theory and Techniques*, edited by Fred M. Dickey and Scott C. Holswade, Marcel Dekker, New York, 2000: 163-213.

D. Synergistic Activities and Selected Awards

- 1980-81: NASA/ASEE Summer Faculty Fellowship, Jet Propulsion Laboratory, Pasadena, CA
- 1988: Fellow, Optical Society of America
- Member of NSF Committee of Visitors during Summer 2000 for the purpose of reviewing the Advanced Networking & Infrastructure Research Programs (ANIR) during the past 3 years. Invited participant in AAAS National Workshop on Developing Guidance for NSF Advanced Networking Infrastructure Support, February 22-23, 1999.
- 2003 – 2009: Topical Editor in Geometrical Optics for *Applied Optics – Optical Technologies* and co-Chair of SPIE Laser Beam Shaping Conferences II-VIII, SPIE 2000-07
- August 12, 2008: *SPIE: Laser Beam Shaping IX:* Meritorious Achievement Award, SPIE Optics & Photonics - 2008, San Diego
- caBIG® 2009 Deployment Award was presented to the UAB Team at the 2009 caBIG® Annual Meeting, July 22, 2009, Marriott Wardman Park, Washington, D.C.
- Research Program: seminal contributions have been made in several areas of optical sciences including laser beam shaping, irradiance and caustic theory, differential equation and genetic algorithm-based optical design, and soft x-ray imaging. This work has been directed towards fundamental understanding of the irradiance (intensity) and imaging characteristics of optical systems used for applications involving lasers and soft x-rays to characterize and process materials. Theoretical, computational, and experimental methods have been used during these investigations.
- Teaching Program: major professor of seven doctoral students in physics during period 1985-99. During past 10 years, have lead an IT developmental group within IT HPC Services with IT Interns and MS level staff with computer science or computing engineering backgrounds. Our group has weekly meetings using information technology – web, wikis, virtual organizations, email, desktop/classroom video conferencing, and teleconferencing – to enhance communications and learning process. Each member reports on progress and problems associated with their work. This academic based leadership works well in IT service organization. This group worked on
- Publications & Funding: Published 152 journal and proceedings articles, book chapters, and reports; presented over 149 invited and contributed papers; and extramural funding 1997-2007 is approximately $3.5M as PI or co-PI.

E. Collaborators & Other Affiliations

- **Collaborators & Co-Editors:** R. E. Cloud, S.-H. Chao, F. M. Dickey, J. Gemmill, J. A. Hoffnagle, S. C. Holswade, J.-P. Robinson
- **Graduate and Postdoctoral Advisors:** Donald G. Burkhard, University of Georgia; Howard Berg, Motorola, Inc.
- **Thesis Advisor and Postgraduate-Scholar Sponsor:** Neal C. Evans, David B. Gore, Wu Jiang, David R. Gabardi, Cheng Wang, Shao-hua Chao, Abd M. Kassim, Issam H. Al-Ahdali, Patrick W. Rhodes, Joseph Tombrello, Jin Lin.