April Doerr-Snyder	
Director of Concrete Materials Laboratory, Principal Concrete Petrographer RJ Lee Group, Inc. 350 Hochberg Road Monroeville, PA 15146	(800) 860-1775 

EDUCATION

- BS, Geology, University of Pittsburgh, 1995

EMPLOYMENT HISTORY

- RJ Lee Group, Inc., Director of Concrete Materials Laboratory, Principal Concrete Petrographer, 2019–present
- RJ Lee Group, Inc., Laboratory Manager, Construction Materials, Concrete Petrographer, 2012–2019
- RJ Lee Group, Inc., Project Scientist, 1997–2012

SUMMARY

- Directs and manages all work related to cementitious material investigations, including business development, training and mentoring of staff, technical oversight, program development and direction,laboratory practices, and administrative support
- 20+ years' experience in concrete petrographic studies
- Expertise in the evaluation of internal and external sulfate attack and alkali aggregate reactions (ASR/ACR) in concrete using a combination of polarized light, fluorescent light, and scanning electron microscopy (SEM) techniques
- Principal Investigator or technical lead on failure/distress investigations of cementitious material/concrete from structures including roadways, bridge elements, parking garages, building foundations, airfield pavements, marine wharfs, and swimming pools employing petrographic techniques and complementary chemical and mechanical testing. Investigations include evaluating the cause of cracking, scaling, and spalling of concrete; delamination and de-bonding of concrete and stucco;damage from freezing and thawing; causes of low strength; fire damage; pool plaster surface discoloration; efflorescence on cementitious products; and coating system evaluations
- Expertise in the application of SEM and computer-controlled SEM to forensic investigations of particulate; source apportionment studies involving ambient particulate; indoor air quality investigations involving building materials dispersion and possible industrial hygiene concerns
- Lead scientist for studies involving expansion of slag used as fill or road base; petrographic evaluation ofrock for use in concrete and/or base course; evaluation of roofing material; industrial coatings failures
- Development of standard operating procedures and specialized client-specific analysis programs
- Implemented a quality system and obtained AASHTO accreditation, and USACE validation of the construction materials laboratory department

INDUSTRY SECTORS SERVED

- Engineering and Construction
- Air Quality and Industrial Hygiene
- Consumer Products – failure analysis, reverse engineering, product development
- Government, DOD, DOE, U.S. Navy, FHWA

PROFESSIONAL MEMBERSHIPS AND ACTIVITIES

- Past-President, Pittsburgh Area Chapter American Concrete Institute (ACI)
  - Member of board of directors from 2013–2020
- American Concrete Institute (ACI)
  - Active contributing member with voting rights on technical committees 221- Aggregates and 201-Durability
  - Sub-committee Chair for 201-0H – Aggregate Reactions
- ASTM International
  - Active and contributing Voting Member on Committees C09 on Concrete and Concrete Aggregates, and C01 on Cement
  - Task group chair for Alkali-Aggregate Reaction Practices C1778, of sub-committee C09.50
  - Task group chair for new Practice for Microscopical Methods for Examination of Cementitious Materials, of sub-committee C09.65
- Editorial Board Member for ASTM's Advances in Civil Engineering Materials Journal
- Society of Concrete Petrographers

PUBLICATIONS AND PRESENTATIONS

- Malone, C., J. Zhu, J. Hu, A. Snyder, E. Giannini. 2021. Evaluation of Alkali-Silica Reaction Damage in Concrete Using Linear and Nonlinear Resonance Techniques. *Construction and Building Materials*, Vol. 303.
- Giannini, E. R., A. E., Snyder, and T. Drimalas. 2021. Diagnosis and Prognosis of ASR in an Airfield Pavement. *Revista Portuguesa de Engenharia de Estruturas*, Vol. III, No. 15, pp. 35–44.
- Snyder, A. 2021. Case Studies Presenting Microstructural Characterization of Potential Alkali Carbonate ReactionDamage. *ACI Virtual Concrete Convention Mini Session on Recent Developments on Alkali Carbonate Reaction*, March.
- Snyder, A. 2020. *Aggregate Reactions Affecting Concrete Durability*. Webinar Presented at RJ Lee Group, May.
- Snyder, A. 2019. *Aggregate and Concrete Petrography-Insights into Aggregate, Concrete, and Issues that Can Affect Their Performance*. PACA & Pittsburgh Chapter ACI Educational Webinar, August.
- Snyder, A., B. Strazisar, C. M. Hefferan, and M. Shah. 2018. Application of Scanning Electron Microscopy (SEM) Montagesfor Concrete Petrographic Studies. Presented at the A*STM Symposium on Advances in Cement Analysis and Concrete Petrography*, San Diego, CA.
- Watts, B., A. Snyder, C. M. Hefferan, C. Ferraro, and H. D. Deford. 2015. Validation of an Automated Scanning Electron Microscopy (SEM) Technique for the Characterization of Cements. *Proceedings of the 37th International Conference on Cement Microscopy*, International Cement Microscopy Association.
- Snyder, A., P. Kyslinger, and R. Lee. 2014. Case Studies of Ongoing Durability Issues Related to

Aggregate Selection. Presented at the *Anna Maria Workshop XV: Durability and Service Life Prediction*, Holmes Beach, FL, November.

- Snyder,A. 2014. Petrographic Solutions to Concrete Forensics Evaluations. Presented at *Pittsburgh Area Chapter ACI Dinner Meeting*, March.
- Watts, B., A. Snyder, C. M. Hefferan, C. Ferraro, and H. D. Deford. 2014. Automated Scanning Electron Microscopy (SEM) Methods for Cement Characterization. Presented at *The Corvalis Workshops: Innovative Characterization Toolsto Assess Performance of Cement-Based Materials*, Oregon State University, July.
- Beyene, M., A. Snyder, R. Lee, and M. Blaszkiewicz. 2013. Alkali Silica Reaction (ASR) as a Root Cause of Distress in a Concrete Made from Alkali Carbonate Reaction (ACR) Potentially Susceptible Aggregates. *Cement and ConcreteResearch*, Vol. 51, pp. 85–95.
- Watts, B., C. Ferraro, A. Snyder, and H. D. Deford. 2013. Automated and Manual Characterization of Input Parameters forthe VCCTL. Presented at the *4th Advances in Cement-based Materials: Characterization, Processing, Modeling and Sensing*, University of Illinois at Urbana, IL, July.
- Sahu, S., A. Snyder, H. P. Lentz, and S. K. Kennedy. 2002. Macroscopic to Microscopic Analysis of Concrete by Scanning Electron Microscopic Montage. *Proceedings of the 24th International Conference on Cement Microscopy*, International Cement Microscopy Association, pp. 224–230.
- Schlaegle, S. F., A. Snyder, and S. A. Brown. 2002. A Friendly Approach to Investigate the Impact of Fugitive Dust Emissionson Neighboring Communities. *Stone, Sand & Gravel Review*, Vol. 18, No. 2, pp. 43–48.
- Sahu, S., A. E. Snyder, S. R. Badger, and R. J. Lee. 2001. Depth Profiling and Phase Discrimination in Deteriorated Concrete Utilizing Scanning Electron Microscopy with Automated Point Count Analysis. *Proceedings of the 23rd International Conference on Cement Microscopy*, International Cement Microscopy Association, pp. 383–390.
- Brown, P. W., A. E. Doerr. 2001. Reply to the discussion of the paper 'Chemical Changes in Concrete Due to the Ingress of Chemical Species,' *Cement and Concrete Research*, Vol. 31, No. 2, pp. 159–160.
- Martello, D., R. Anderson, P. Rohar, G. Irdi, G. Veloski, J. Tamilia, R. Lynn, K. Waldner, C.M. White, G. Casuccio, S. Schlaegle, and A. Snyder. 2000. Quantitative Scanning Electron Microscopy of Ambient Air 2.5µm Particles. Presentedat the *Air Quality II Conference*, McLean, VA, September.
- Schlaegle, S. F. and A. E. Doerr. 2000 Approaches to the Collection and Analysis of Nuisance Dust using a Combination of Old and New Sampling Methods and Analytical Techniques. Presented to the *Air & Waste Management Association Conference*.
- Brown, P. W. and A. E. Doerr. 2000. Chemical Changes in Concrete Due to the Ingress of Aggressive Species. *Cement and Concrete Research*, Vol. 30, No. 3, pp. 411–418.
- Cassucio, G. S., T. L. Lersch, and A. E. Doerr. 1998. Evaluating Source/Receptor Relationships Using Scanning Electron Microscopy Techniques. Presented to the *Conference on Air Quality sponsored by the Energy and Environmental Research Center*, U.S. EPA and U.S. DOE Federal Energy Technology Center, McLean, VA, December.
- Doerr, A., S. R. Badger, P. W.Brown, and S. Sahu. 1998. Montages Link Microscopic to Macroscopic Information in Concrete Analysis. Presented at the *Microscopy & Microanalysis Conference*, Atlanta, Georgia, July.