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Professor
Civil, Environmental and Architectural Engineering
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Licensed Professional Engineer–Kansas
ACI Concrete Field Testing Technician-Grade I

EDUCATION:

University of Kansas, Lawrence, KS

- PhD (with honors) in Civil Engineering January 2011
- Master of Science in Civil Engineering December 2008

University of Rochester, Rochester, NY

- BS (summa cum laude) in Mechanical Engineering,
minor in Mathematics May 2006

WORK EXPERIENCE:

Professor, University of Kansas	August 2025 – Present
Associate Professor, University of Kansas	August 2019 – August 2025
Chair's Council Assistant Professor, University of Kansas	August 2018 – August 2019
Assistant Professor, University of Kansas	August 2013 – August 2019
Visiting Assistant Professor, University of Kansas	August 2012 – May 2013
Lecturer, University of Kansas	January 2011 – August 2012
Research Assistant, University of Kansas	August 2006 – January 2011
Teaching Assistant, University of Kansas & University of Rochester	2003 – 2006

PROFESSIONAL SERVICE:

- Member, ASTM International Committee A01 on Steel, Stainless Steel and Related Alloys, Subcommittee A01.14 on Methods of Corrosion Testing and Subcommittee A01.05 on Steel Reinforcement
- Member, American Society of Civil Engineers
- Member, American Concrete Institute Committee S802 on Teaching Methods and Educational Materials
- Member, American Concrete Institute Committee 222 on Corrosion of Metals in Concrete
- Member, American Concrete Institute Committee 123 on Research and Current Developments
- Member, American Concrete Institute Committee 408 on Bond and Development of Steel Reinforcement – Joint with ASCE

AWARDS AND HONORS:

Henry E. Gould Award for Distinguished Service to Undergraduate Engineering Education,
University of Kansas, School of Engineering, 20126

L. William and Margaret B. Zahner Chair's Council Associate Professor University of Kansas, 2022

Miller Faculty Scholar, 2022

Outstanding Reviewer-*Journal of Cold Regions Engineering*, ASCE, 2019

Outstanding Reviewer-*Journal of Materials in Civil Engineering*, ASCE, 2019

HOPE Award, 2019 (highest award for teaching at the University of Kansas – selected by students)

Chair's Council Assistant Professor, University of Kansas, 2018

Henry E. Gould Award for Distinguished Service to Undergraduate Engineering Education, University of Kansas, School of Engineering, 2018

Outstanding Educator Award, Mortar Board, University of Kansas, 2017

PAPERS:

Christiansen, M., Banerji, S., Schokker, A., and O'Reilly, M., "Approaches to Teaching the Sustainability and Resiliency of Concrete Materials," *ACI Special Publication 367*, March 2026, pp. 43-55.

Vosough-Grayli, P., O'Reilly, M., and Darwin, D., "Corrosion Resistance of Continuously Galvanized Reinforcement," *ACI Materials Journal*, Vol. 122, No. 4, July 2025, pp. 77-88.

Lequesne, R., Al-Sabawy, A., Darwin, D., Lepage, A., O'Reilly, M., Guillén, E., and Spradling, D., "Strength and Detailing of Beams with High-Strength Headed and Hooked Stirrups," *ACI Structural Journal*, Vol. 122, No. 4, July 2025, pp. 139-153.

Banaeipour, A., Darwin, D., O'Reilly, M., and Lepage, A., "Development of Large High-Strength Headed Reinforcing Bars," *ACI Structural Journal*, Vol. 122, No. 3, May 2025, pp. 187-199.

Khokher, S., Sanguinetti, P., O'Reilly, M., "Challenges in Enhancing Workability and Printability for 3D-Printable Geopolymer Mortar," *Digital Concrete 2024 - Supplementary Proceedings*, Sept. 2024, 10 pp.

Vosough-Grayli, P., O'Reilly, M., and Darwin, D., "Effects of UV Exposure on Corrosion Performance of Epoxy-Coated Reinforcement," *ACI Materials Journal*, Vol. 121, No. 4, July 2024.

Han, J., Ye, Y., Parsons, R., and O'Reilly, M., "Experimental Study on Physical and Mechanical Properties of Lightweight Cellular Concrete Specimens Cast in Field and Laboratory," *Transportation Research Record*, March 2024.

D'Alessandro K., Ramniceanu, A., Henschen, J., and O'Reilly, M. "Pedagogical Techniques used to Teach Fresh and Hardened Concrete Properties," *ACI Special Publication 359*, November 2023, pp. 39-53.

Ye, Y., Han, J., Liu, H., Rachford, S., Parsons, R., Dolton, B., and O'Reilly, M., "Pullout resistance of geogrid and steel reinforcement embedded in lightweight cellular concrete backfill," *Geotextiles and Geomembranes*, 2022, 12 pp.

O'Reilly, M., Lafikes, J., Farshadfar, O., Grayli, P., Al-Qassag O., and Darwin, D., "Effect of Concrete Settlement Cracks on Corrosion Initiation," *ACI Materials Journal*, Vol. 119, No. 4, July 2022, pp. 117-124.

Al-Qassag, O., Brettmann, R., Darwin, D., O'Reilly, M., and Khajehdehi, R., "Synthetic Fibers and Rheology Modifier: Effects on Settlement Cracking," *ACI Materials Journal*, Vol. 119, No. 11, Jan 2022, pp. 289-296.

O'Reilly, M., Darwin, D., Browning, J., Locke, C., Virmani, Y., Ji, J., Gong, L., Guo, G., Draper, J., and Xing, L., "Multiple Corrosion Protection Systems for Reinforced Concrete Bridge Components: Field Tests," *Journal of Materials in Civil Engineering*, ASCE, Vol. 33, No. 12, Dec. 2021, pp. 04021363-1 - 04021363-12.

Yasso, S., Darwin, D., and O'Reilly, M., "Effects of Concrete Tail Cover and Tail Kickout on Anchorage Strength of 90-Degree Hooks," *ACI Structural Journal*, Vol. 118, No. 6, Nov 2021, pp. 227-236.

Darwin, D., Khajehdehi, R., Feng, M., Lafikes, J., Ibrahim, E., and O'Reilly, M., "Low-Cracking High-Performance Concrete (LC-HPC) for Durable Bridge Decks," *Cracking and Durability in Sustainable Concretes*, *American Concrete Institute Symposium* Vol., SP-336, R. Leistikow and K. W. Kramer, ed., 2019, pp. 101-116.

Lafikes, J., Khajehdehi, R., Feng, M., O'Reilly, M., and Darwin, D., "Internal Curing and Supplementary Cementitious Materials in Bridge Decks," *Cracking and Durability in Sustainable Concretes*, *American Concrete Institute Symposium* Vol., SP-336, R. Leistikow and K. W. Kramer, ed., 2019, pp. 1-20.

Ghimire, K. P., Shao, Y., Darwin, D., and O'Reilly, M., "Conventional and High-Strength Headed Bars – Part 2: Data Analysis," *ACI Structural Journal*, Vol. 116, No. 4, May 2019, pp. 265-272.

Ghimire, K. P., Shao, Y., Darwin, D., and O'Reilly, M., "Conventional and High-Strength Headed Bars – Part 1: Anchorage Tests," *ACI Structural Journal*, Vol. 116, No. 4, May 2019, pp. 255-264.

O'Reilly, M., Farshadfar, O., Darwin, D., "Effect of SCMs on Chloride Threshold and Corrosion Rate of Reinforcement," *ACI Materials Journal*, Vol. 116, No. 1, Jan. 2019, pp. 125-133

O'Reilly, M., Farshadfar, O., Darwin, D., Browning, J., and Locke, C., "Corrosion-Induced Concrete Cracking for Uncoated and Galvanized Reinforcing Bars," *ACI Materials Journal*, Vol. 115, No. 6, Nov.-Dec. 2018 , pp. 825-832

Khajehdehi, R., Feng, M., Darwin, D., Lafikes, J., Ibrahim, E. K., and O'Reilly, M., "Combined Effects of Internal Curing, SCMs, and Expansive Additives on Concrete Shrinkage," *Advances in Civil Engineering Materials*, ASTM, Vol. 7, No. 4, 16 pp.

Ajaam, A., Yasso, S., Darwin, D., O'Reilly, M., and Sperry, J., "Anchorage Strength of Closely-Spaced Hooked Bars," *ACI Structural Journal*, Vol. 115, No. 4, July-Aug. 2018, pp. 1143-1152.

Sperry, J., Darwin, D., O'Reilly, M., Lepage, A., Lequesne, R., Matamoros, A., Feldman, L., Yasso, S., Searle, N., DeRubeis, M., and Ajaam, A., "Conventional and High-Strength Hooked Bars: Detailing Effects," *ACI Structural Journal*, Vol. 115, No. 1, Jan. 2018, pp. 247-257.

O'Reilly, M., Sperry, J., Darwin, D., Lafikes, J., Somogie, I., Storm, S., and Browning, J., "Corrosion Performance of Poorly Pickled Stainless Steel Reinforcement," *ACI Materials Journal*, Vol. 114, No. 6, Nov.-Dec. 2017, pp. 839-845.

Sperry, J., Darwin, D., O'Reilly, M., Lequesne, R. D., Yasso, S., Matamoros, A., Feldman, L. R., and Lepage, A., "Conventional and High-Strength Hooked Bars - Part 2: Data Analysis," *ACI Structural Journal*, Vol. 114, No. 1, Jan.-Feb. 2017, pp. 267-314.

Sperry, J., Yasso, S., Searle, N., DeRubeis, M., Darwin, D., O'Reilly, M., Matamoros, A., Feldman, L.R., Lepage, A., Lequesne, R.D., and Ajaam, A., "Conventional and High-Strength Hooked Bars - Part 1: Anchorage Tests," *ACI Structural Journal*, Vol. 114, No. 1, Jan.-Feb. 2017, pp. 255-266.

Yuan, J., O'Reilly, M., Matamoros, A., and Darwin, D., "Effect of Preexisting Cracks on Lap Splice Strength of Reinforcing Bars," *ACI Structural Journal*, Vol. 113, No. 4, Jul.-Aug. 2016, pp. 801-812.

O'Reilly, M., Darwin, D., and Browning, J., "Corrosion Performance of Prestressing Strands in Contact with Dissimilar Grouts," *ACI Materials Journal*, Vol. 112, No. 4, Jul.-Aug. 2015, pp. 491-500.

Darwin, D., O'Reilly, M., Browning, J., Locke, C. E., Virmani, Y. P., Ji, J., Gong, L., Guo, G., Draper, J., and Xing, L., "Multiple Corrosion Protection Systems for Reinforced Concrete Bridge Components: Laboratory Tests," *Journal of Materials in Civil Engineering*, ASCE, Vol. 26, No. 11, Nov. 2014, pp. 04014085-1-04014085-9.

Darwin, D., O'Reilly, M., Browning, J., and Xing, L., "Case for Changing Reinforcing Bar Deformation Spacing Requirements," *Journal of Testing and Evaluation*, ASTM, Vol. 42, No. 2, Mar. 2014, 8 pp.

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Darwin, D., Browning, J.P., O'Reilly, M., Xing, L. and Ji, J., "Critical Chloride Corrosion Threshold of Galvanized Reinforcing Bars," *ACI Materials Journal*, Vol. 106, No. 2, Mar.-Apr. 2009, pp. 176-183.

REPORTS:

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O'Reilly, M., and Al-Qassag, O., "Rapid Macrocell Tests of 2205 Reinforcing Bars," *SL Report* 25-2, The University of Kansas Center for Research, Inc., Lawrence, KS, March 2025, 7 pp.

Tiwari, B., Darwin, D., and O'Reilly, M., "Evaluation of Multi-Layer Polymer Concrete Overlays," *SL Report* 25-1, University of Kansas Center for Research, Inc., Lawrence, KS, January 2025, 76 pp.

O'Reilly, M., and Al-Qassag, O., "Rapid Macrocell Tests of 2304 Reinforcing Bars," *SL Report* 24-2, The University of Kansas Center for Research, Inc., Lawrence, KS, December 2024, 7 pp.

Thapa, S., Darwin, D., O'Reilly, M., and Lepage, A., "Beam-End Bond Tests of Textured-Epoxy-Coated No. 6 Reinforcing Bars," *SL Report* 24-1, University of Kansas Center for Research, Inc., Lawrence, KS, November 2024, 14 pp.

Adhikari, R., Darwin, D., and O'Reilly, M., "Development Length and Splice Strength of High-Strength Reinforcing Bars in High-Strength Concrete," *SM Report* No. 160, University of Kansas Center for Research, Inc., Lawrence, KS, July 2024, 401 pp.

Dhungel, S., Bahadori, A., Darwin, D., O'Reilly, M., and Truman, K., "Evaluation of Cracking Performance of Bridge Decks With And Without Overlays and With and Without Fibers," *SL Report* 23-1, University of Kansas Center for Research, Inc., Lawrence, KS, November 2023, Final Submittal May 2024, 102 pp.

Bahadori, A., Darwin, D., O'Reilly, M., and Salavati, M., "Construction of Low-Cracking High-Performance Bridge Decks Incorporating New Technology Phase II," *Report* No. FHWA-KS-23-02, Kansas Department of Transportation (also *SM Report* No. 157, University of Kansas Center for Research, Inc., Lawrence, KS), December 2023, 291 pp.

Darwin, D., O'Reilly, M., Lequesne, R., and Thapa, S., "Bond Behavior of Epoxy-Coated Reinforcing Bars in Non-Proprietary UHPC," *Final Project Report* – FHWA-OK-23-04, Oklahoma Department of Transportation, (also *SM Report* No. 157, University of Kansas Center for Research, Inc., Lawrence, KS). October, 2023, 95 pp.

Han, J., Ye, Y., Parsons, R., O'Reilly, M., and Liu, H., "Pullout Resistance of Reinforcement of Lightweight Cellular Concrete Fill," *KTRAN Report* KU-21-2, The University of Kansas Center for Research, Inc., Lawrence, KS, September 2023, 72 pp.

Dhungel, S., Darwin, D., and O'Reilly, M., "Effects of Total Internal Water Content on Freeze-Thaw Durability and Scaling Resistance of Internally-Cured Concrete," *SM Report* No. 154, University of Kansas Center for Research, Inc., Lawrence, KS, July 2023, 106 pp.

Vosough Grayli, P., O'Reilly, M., and Darwin, D., "Evaluation of Multiple Corrosion Protection Systems for Reinforced Concrete Bridge Decks," *SM Report* No. 152, University of Kansas Center for Research, Inc., Lawrence, KS, July 2023, 322 pp.

Nazzal, L. A., Darwin, D., and O'Reilly, M., "Anchorage of High-Strength Reinforcing Bars in Concrete," *SM Report No. 150*, University of Kansas Center for Research, Inc., Lawrence, KS, January 2023, 300 pp.

Bahadori, A., Darwin, D., and O'Reilly, M., "Internally-Cured Low-Cracking High-Performance Concrete (IC-LC-HPC) Bridge Decks: Durability and Cracking Performance," *SM Report No. 149*, University of Kansas Center for Research, Inc., Lawrence, KS, January 2023, 535 pp.

O'Reilly, M. and Darwin, D., "Chloride Content and Carbonation of KU Memorial Stadium Cores," *SL Report 22-4*, The University of Kansas Center for Research, Inc., Lawrence, KS, August, 2022, 11 pp.

Aljawad, Y., Lequesne, R. D., and O'Reilly, M., "Low-Shrinkage Ultra-High-Performance Concrete," *SL Report 22-3*, The University of Kansas Center for Research, Inc., Lawrence, KS, August, 2022, 69 pp.

O'Reilly, M., and Martin, G., "Rapid Macrocell Tests of 2205 Reinforcing Bars," *SL Report 22-2a*, The University of Kansas Center for Research, Inc., Lawrence, KS, May 2022, 7 pp.

O'Reilly, M., "Effect of Damaged Area on Service Life of Epoxy-Coated Reinforcement," *SL Report 22-1*, The University of Kansas Center for Research, Inc., Lawrence, KS, May 2022, 11 pp.

O'Reilly, M., "Galvanic Corrosion Potential of ChromX Reinforcement," *SL Report 21-2*, The University of Kansas Center for Research, Inc., Lawrence, KS, July 2021, 14 pp.

O'Reilly, M., Vosough-Grayli, P., and Darwin, D., "Corrosion Performance of ChromX 2100, 4100, and 9100 Bars," *SL Report 21-1*, The University of Kansas Center for Research, Inc., Lawrence, KS, January 2021, 34 pp.

Darwin, D., O'Reilly, M., Vosough Grayli, P., and Hartell, J. A., "Evaluating the Performance of Existing Reinforcement for Oklahoma Bridges," Final Project Report – FHWA-OK-20-06, Oklahoma Department of Transportation, November 2020, 194 pp.

Lafikes, J., Darwin, D., and O'Reilly, M., "Durability, Construction, and Early Evaluation of Low-Cracking High-Performance Concrete (LC-HPC) Bridge Decks," *SM Report No. 141*, University of Kansas Center for Research, Inc., Lawrence, KS, June 2020, 403 pp.

Abdul Baki, A., Darwin, D., and O'Reilly, M., "Effects of Deicing Salts on the Durability of Concrete Incorporating Supplementary Cementitious Materials," *SM Report No. 140*, The University of Kansas Center for Research, Inc., Lawrence, KS, May 2020, 201 pp.

Al-Sabawy, A., Lequesne, R. D., O'Reilly, M., Darwin, D., and Lepage, A., "Headed and High-Strength Shear Reinforcement in Concrete Members," *SM Report No. 139*, The University of Kansas Center for Research, Inc., Lawrence, KS, May 2020, 498 pp.

Hano, M. M., Darwin, D., Misra, A., O'Reilly, M., "Headed Reinforcing Bars: CCT Node Tests, Design Provisions, and Evaluation of a Granular Micromechanics Model for use in Finite Element

Analysis of Bond,” *SM Report* No. 135, University of Kansas Center for Research, Inc., Lawrence, KS, December 2019, 282 pp.

Ibrahim, E. K., Darwin, D., O’Reilly, M., “Effect of Crack-Reducing Technologies and Supplementary Cementitious Materials on Settlement Cracking of Plastic Concrete and Durability Performance of Hardened Concrete,” *SM Report* No. 134, University of Kansas Center for Research, Inc., Lawrence, KS, September 2019, 268 pp.

Lafikes, J., Darwin, D., O’Reilly, M., Feng, M., Bahadori, A., and, Khajehdehi, R., “Construction of Low-Cracking High-Performance Bridge Decks Incorporating New Technology,” *SM Report No. 132*, University of Kansas Center for Research, Inc., Lawrence, KS, June 2019, 98 pp.

Farshadfar, O., O’Reilly, M., Darwin, D., “Corrosion Performance of Plain and Epoxy-Coated MMFX Bars,” *SL Report* 18-4, The University of Kansas Center for Research, Inc., Lawrence, KS, October 2018, 114 pp.

Lafikes, J., Khajehdehi, R., Feng, M., O’Reilly, M., and Darwin, D., “Internal Curing and Supplementary Cementitious Materials in Bridge Decks,” *SL Report* 18-2, University of Kansas Center for Research, Inc., Lawrence, KS, April 2018, 67 pp.

Ghimire, K., Darwin, D., and O’Reilly, M., “Anchorage of Headed Reinforcing Bars,” *SM Report* No. 127, University of Kansas Center for Research, Inc., Lawrence, KS, January 2018, 279 pp.

Lequesne, R., O’Reilly, M., Darwin, D., Lepage, A., Al-Sabawy, A., Guillen, E., and Spradling, D., “Use of Headed Bars As Shear Reinforcement,” *SM Report* No. 126, The University of Kansas Center for Research, Inc., Lawrence, KS, January 2018, 244 pp.

Pippen, S., O’Reilly, M., Darwin, D., and Lepage, A. “Advanced Nuclear Technology: Investigating Mechanical Splicing of Reinforcing Steel,” *Electric Power Research Institute Report* No. 3002014096, October 2017, 66 pp.

O’Reilly, M., Darwin, D., Bahadori, A., and Nazzal, L. “Evaluation of Jotaguard RB 4004 For Relative Bond Strength, Coating Flexibility, and Chloride Permeability,” *SL Report* 17-03, University of Kansas Center for Research, Lawrence, KS, 2017, 16 pp.

Ajaam, A., Darwin, D., and O’Reilly, M., “Anchorage Strength of Reinforcing Bars with Standard Hooks,” *SM Report* No. 125, The University of Kansas Center for Research, Inc., Lawrence, KS, April 2017, 372 pp.

Yasso, S., Darwin, D., and O’Reilly, M., “Anchorage Strength of Standard Hooked Bars in Simulated Exterior Beam-Column Joints,” *SM Report* No. 124, The University of Kansas Center for Research, Inc., Lawrence, KS, April 2017, 330 pp.

Keith, C., Najvani, A., O’Reilly, M., Medina, M., Darwin, D., Abdul Baka, A., Nazzal, L., and Lee, K., “Assessment of Moisture-Tolerant Coatings for Decreasing Open Top Construction Time,” *SM Report* No. 123, The University of Kansas Center for Research, Inc., Lawrence, KS, April 2017, 56 pp.

Farshadfar, O., O'Reilly, M., Darwin, D., "Performance Evaluation of Corrosion Protection Systems for Reinforced Concrete," *SM Report* No. 122, The University of Kansas Center for Research, Inc., Lawrence, KS, January 2017, 350 pp.

Darwin, D., Khajehdehi, R., Alhmood, A., Feng, M., Lafikes, J., Ibrahim, E., O'Reilly, M., "Construction of Crack-Free Bridge Decks: Final Report," *SM Report* No. 121, The University of Kansas Center for Research, Inc., Lawrence, KS, December 2016, 160 pp.

Farshadfar, O., Keith C. A., O'Reilly, M., Darwin, D. "Corrosion Tests of XM28 Stainless Steel Reinforcing Bars," *SL Report* No. 16-3, The University of Kansas Center for Research, Inc., Lawrence, KS, August 2016, 34 pp.

Shao, Y., Darwin, D., O'Reilly, M., Lequesne, R.D., Ghimire, K., and Hano, M. "Anchorage of Conventional and High-Strength Headed Reinforcing Bars," *SM Report* 117, The University of Kansas Center for Research, Inc., Lawrence, KS, August 2016, 234 pp.

Al-Qassag, O., Darwin, D., and O'Reilly, M., "Effect of a Rheology Modifier on Settlement Cracking of Concrete," *SM Report* 116a, The University of Kansas Center for Research, Inc., Lawrence, KS, April 2016, 38 pp.

Carter, N. and O'Reilly, M. "Graffiti Resistance of Wax-based and Epoxy-based Coatings on Steel and Concrete Substrates," *SL Report* 16-1, The University of Kansas Center for Research, Inc., Lawrence, KS, January 2016, 50 pp.

Sperry, J., Darwin, D., O'Reilly, M., and Lequesne, R., "Anchorage Strength of Conventional and High-Strength Hooked Bars in Concrete," *SM Report* 115, University of Kansas Center for Research, Inc., Lawrence, Kansas, December 2015, 266 pp.

Al-Qassag, O., Darwin, D., and O'Reilly, M., "Effect of Synthetic Fibers and a Rheology Modifier on Settlement Cracking of Concrete," *SM Report* 116, University of Kansas Center for Research, Inc., Lawrence, Kansas, December 2015, 113 pp.

Alhmood, A., Darwin, D., and O'Reilly, M., "Crack Surveys of Low-Cracking High-Performance Concrete Bridge Decks in Kansas 2014-2015," *SL Report* 15-3 University of Kansas Center for Research, Inc., Lawrence, Kansas, September 2015, 116 pp.

Sperry, J., Al-Yasso, S., Searle, N., DeRubeis, M., Darwin, D., O'Reilly, M., Matamoros, A., Feldman, L., Lepage, A., Lequesne, R., and Ajaam, A., "Anchorage of High-Strength Reinforcing Bars with Standard Hooks," *SM Report* 111, University of Kansas Center for Research, Inc., Lawrence, Kansas, June 2015, 244 pp.

Brettmann, R., Darwin, D., and O'Reilly, M., "Developing a Test Procedure to Evaluate Settlement Cracking Performance," *SL Report* 15-2, University of Kansas Center for Research, Inc., Lawrence, Kansas, May 2015, 40 pp.

Farshadfar, O., Ajaam, A., Hano, M., O'Reilly, M., Darwin, D., "Bond Strength of Reinforcing Bars with Deformation Spacings that Exceed Maximum Specified in ASTM A615," *SL Report* 14-2, The University of Kansas Center for Research, Inc., Lawrence, KS, August 2014, 26 pp.

Searle, N., DeRubeis, M., Darwin, D., Matamoros, A. B., O'Reilly, M., and Feldman, L., "Anchorage of High-Strength Reinforcing Bars with Standard Hooks - Initial Tests," *SM Report 108*, The University of Kansas Center for Research, Inc., Lawrence, KS, February 2014, 120 pp.

Darwin, D., O'Reilly, M., Somogie, I., Sperry, J., Lafikes, J., Storm, Browning, J., "Stainless Steel Reinforcement as a Replacement for Epoxy Coated Steel in Bridge Decks," *SM Report 105*, University of Kansas Center for Research, Inc., Lawrence, Kansas, August 2013, 205 pp.

O'Reilly, M. and Darwin, D., "Rapid Macrocell Tests of 2205 and XM-28 Reinforcing Bars," *SL Report 13-2a*, University of Kansas Center for Research, Inc., Lawrence, Kansas, January 2013, 29 pp.

O'Reilly, M. and Darwin, D., "Rapid Macrocell Tests of 2304 and XM-28 Reinforcing Bars," *SL Report 12-3a*, University of Kansas Center for Research, Inc., Lawrence, Kansas, November 2012, 17 pp.

Yuan, J., O'Reilly, M., Matamoros, A., and Darwin, D., "Effect of Simulated Cracks on Lap Splice Strength of Reinforcing Bars," *SL Report 12-2*, University of Kansas Center for Research, Inc., Lawrence, Kansas, June 2012, 243 pp.

O'Reilly, M., Darwin, D., and Browning, J.P., "Corrosion Performance of Prestressing Strands in Contact with Dissimilar Grouts," *SL Report 12-1*, University of Kansas Center for Research, Inc., Lawrence, Kansas, April 2012, 50 pp.

Lafikes, J., Storm, S., Darwin, D., Browning, J.P., and O'Reilly, M., "Stainless Steel Reinforcement as a Replacement for Epoxy Coated Steel in Bridge Decks," Annual Report for FY 2011, ODOT SPR Item Number 2231, November 2011, 172 pp.

Darwin, D., Browning, J., O'Reilly, M., Locke, C. E., and Virmani, Y. P., "Multiple Corrosion-Protection Systems for Reinforced Concrete Bridge Components," *Publication No. FHWA-HRT-11-060*, Federal Highway Administration, August 2011, 256 pp.

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Sturgeon, W.J., O'Reilly, M., Darwin, D., and Browning, J.P., "Rapid Macrocell Tests of ASTM A775, A615, and A1035 Reinforcing Bars" *SL Report 10-4*, University of Kansas Center for Research, Inc., Lawrence, Kansas, November 2010, 46 pp.

Sturgeon, W.J., O'Reilly, M., Darwin, D., and Browning, J.P., "Rapid Macrocell Tests of EnduraMet® 2304 Stainless Steel Bars," *SL Report 10-3*, University of Kansas Center for Research, Inc., Lawrence, Kansas, September 2010, 40 pp.

O'Reilly, M., Sturgeon, W.J., Darwin, D., and Browning, J.P., "Rapid Macrocell Tests of LDX 2101® Stainless Steel Bars," *SL Report 10-2*, University of Kansas Center for Research, Inc., Lawrence, Kansas, May 2010, 42 pp.

O'Reilly, M., Darwin, D., and Browning, J.P., "Initial Evaluation of Corrosion Performance and Alkali-Reactivity of Ceramic-Coated Reinforcing Bars," *SL Report 10-1*, University of Kansas Center for Research, Inc., Lawrence, Kansas, January 2010, 27 pp.

O'Reilly, M., Darwin, D., and Browning, J.P., "Beam-End Bond Tests and Bend Tests of Zinc-Clad No. 6 Reinforcing Bars," *SL Report 09-2*, University of Kansas Center for Research, Inc., Lawrence, Kansas, November 2009, 12 pp.

Darwin, D., Browning, J.P., O'Reilly, M., and Xing, L., "Bond Strength of Reinforcing Bars with Deformation Spacings that Exceed Maximum Specified in ASTM A615," *SL Report 08-1*, University of Kansas Center for Research, Inc., Lawrence, Kansas, March 2008, 21 pp.

PRESENTATIONS:

"Evaluation of a Modified ASTM C157 for Early-Age Volume Change in Concrete." ACI Committee 201, October 26, 2020.

"Procedures for Identifying Corrosive Environments and Active Corrosion in Reinforced Concrete Structures – Corrosion Evaluation Methods (Part 2)". October 2019, Cincinnati, OH.

"Chloride Threshold and Corrosion Rate of Concrete Containing SCM's," ACI Committee 222, October 17, 2017, Anaheim CA.

"Permeability Around Non-Chromate Treated Galvanized Bars," Joint ACI Committee 222/RILEM Meeting, October 14, 2017, Anaheim CA, invited.

"Evaluation of Reinforcing Bar Corrosion Performance," FHWA Corrosion Resistant Reinforcing Bar Seminar, September 13, 2016, Harrisburg, PA, invited.

"TRB Webinar: Controlling Corrosion of Infrastructure Systems," TRB Webinar Series, August 4, 2016. Co-presenter w/ Kingsley Lau.

"Effect of Early Age Cracking on Corrosion in Reinforced Concrete," NACE Concrete Service Life Extension conference, May 25, 2016, Orlando FL.

"Evaluation of Reinforcing Bar Corrosion Performance," FHWA Corrosion Resistant Reinforcing Bar Seminar, April 7, 2016, Stillwater, OK, invited.

"Evaluation of Reinforcing Bar Corrosion Performance," FHWA Corrosion Resistant Reinforcing Bar Seminar, August 11, 2015, Honolulu, HI, invited.

"Evaluation of Reinforcing Bar Corrosion Performance," FHWA Corrosion Resistant Reinforcing Bar Seminar, April 28, 2015, Helena, MT, invited.

"Durability of Concrete: Ongoing Research," SEAKM, September 15 2014, Wichita, KS, invited.

"Durability of Concrete: Ongoing Research," KAPA Research & Specifications (R&S) Committee, August 6 2014, Topeka, KS, invited.

“Bond Strength of Epoxy-Coated Reinforcement,” Qatar Steel, May 26 2014, Doha, Qatar, invited.

“Evaluation of Reinforcing Bar Corrosion Performance,” FHWA Corrosion Resistant Reinforcing Bar Seminar, May 14 2014, Topeka, KS, invited.

“Evaluation of Reinforcing Bar Corrosion Performance,” FHWA Corrosion Resistant Reinforcing Bar Seminar, November 21 2013, Springfield, IL, invited.

“Evaluation of Reinforcing Bar Corrosion Performance,” FHWA Corrosion Resistant Reinforcing Bar Seminar, November 19 2013, Ames, IA, invited.

“Comparison of ASTM A955 Corrosion Testing Methods with Field Performance of Reinforcement,” American Concrete Institute Convention, October 19 2013, Phoenix AZ

“Evaluation of Reinforcing Bar Corrosion Performance,” FHWA Corrosion Resistant Reinforcing Bar Seminar, August 15 2013, Queens, NY, invited.

“Evaluation of Reinforcing Bar Corrosion Performance,” FHWA Corrosion Resistant Reinforcing Bar Seminar, June 20 2013, Baltimore, MD, invited.

“Evaluation of Reinforcing Bar Corrosion Performance,” FHWA Corrosion Resistant Reinforcing Bar Seminar, May 9 2013, Lincoln, NE, invited.

“Evaluation of Reinforcing Bar Corrosion Performance,” FHWA Corrosion Resistant Reinforcing Bar Seminar, May 7 2013, Jefferson City, MO, invited.

“Evaluation of Reinforcing Bar Corrosion Performance,” FHWA Corrosion Resistant Reinforcing Bar Seminar, July 17 2012, Tampa, FL, invited.

“Corrosion Performance of Prestressing Strands in Contact with Two Different Grouts”. Post-Tensioning Institute Convention, May 6–8 2012, Nashville, TN, invited.

“Multiple Corrosion Protection Systems for Reinforced Concrete Bridge Decks”. American Concrete Institute Convention, April 22–26 2007, Atlanta, GA.

GRANTS:

“Enhancing MALP and MKP as Repair Materials Through Joint Usage and in Combination with Ceramic Paint,” October 2025-September 2028, ODOT, \$341,539 (Co-investigator with D. Darwin (PI))

“Evaluation of 2205 Stainless Steel Reinforcement,” January 2025-May 2025, Raajratna Metal Industries Ltd., \$3,600 (Principal Investigator)

“Evaluation of 2304 Stainless Steel Reinforcement,” August 2024-December 2024, Raajratna Metal Industries Ltd., \$3,600 (Principal Investigator)

“Textured Epoxy-Coated Hooked and Headed Bars,” January 2024- January 2026, CRSI, \$490,000 (Co-investigator with D. Darwin (PI) and A. Lepage)

“Corrosion Resistance of Damaged Textured Epoxy-Coated Reinforcement,” December 2023-May 2026, CRSI, \$290,000 (Principal Investigator w/ D. Darwin)

“Effects of Carbon Sequestration on Corrosion of Reinforced Concrete in Kansas,” June 2023-November 2025, KDOT, \$151,000 (Principal Investigator w/ D. Darwin)

“Effectiveness of Magnesium-Alumino-Liquid Phosphate-Based Concrete as a Repair Material,” October 2022-September 2025, ODOT, \$181,000 (Co-investigator with D. Darwin (PI))

“Evaluation of Multi-Layer Polymer Concrete Overlays,” August 2022-August 2025, KDOT, \$157,654 (Co-investigator with D. Darwin (PI))

“Experimental Study of Lightweight Cellular Concrete Fill for MSE Walls and Buried Pipes,” April 2022 – April 2024, Mixonite USA, \$110,000 (Co-investigator with J. Han (PI) and R. Parsons)

“Bond Behavior of Epoxy Coated Reinforcing Bars in Non-proprietary UHPC,” October 2021-September 2023, ODOT, \$251,820 (Co-investigator with D. Darwin (PI))

“Service Life Prediction of ECR Under Varying Damage Conditions,” January 2021–May 2021, CRSI, \$3,690 (Principal Investigator)

“Bond Strength Of Textured Epoxy-Coated Bars,” December 2020–December 2022, Sherwin Williams, \$300,000 (Principal Investigator w/ D. Darwin)

“Experimental Study of Lightweight Cellular Fill for MSE Walls,” October 2020–October 2021, Mixonite USA, \$91,000 (Co-investigator with J. Han (PI) and R. Parsons)

“Development Length & Splice Strength of High Strength Reinforcing Bars in High-Strength Concrete,” January 2020–December 2022, CRSI, \$300,000 (Co-investigator with D. Darwin (PI) and A. Lepage).

“Measuring Transport Properties of Portland Cement Concrete Using Electrical Resistivity,” October 2019–December 2021, IDOT, \$54,163 (Principal Investigator)

“Construction of Low-Cracking High-Performance Bridge Decks Incorporating New Technology-Phase II” January 2019–December 2021, KDOT and FHWA, \$270,000 (Co-investigator with D. Darwin (PI))

“Evaluating Corrosion Resistance of Bent Reinforcing Bars,” January 2019–August 2019, CRSI, \$17,000 (Principal Investigator with D. Darwin)

“Development of Large High-Strength Headed Reinforcing Bars,” August 2018–August 2021, Charles Pankow Foundation, ACI Foundation, BarSplice Products, Dextra, Headed Reinforcement Corporation, Pentair, and CRSI Education and Research Foundation, \$380,000 (Co-investigator with D. Darwin (PI), R. Lequesne, and A. Lepage).

“Evaluating the Performance of Existing Reinforcement for Oklahoma Bridges,” October 2017–September 2020, Oklahoma Department of Transportation, \$219,105 (Co-investigator with D. Darwin (PI))

“Investigating Mechanical Splicing of Reinforcing Steel,” January 2017–December 2017, EPRI, \$49,994 (PI, with D. Darwin and A. Lepage)

“Development of a Chloride Threshold Method for ASTM A1035,” January 2017–May 2020, MMFX, \$62,141 (PI, with D. Darwin)

“Construction of Low-Cracking High-Performance Bridge Decks Incorporating New Technology,” January 2016–December 2018, KDOT and FHWA, \$270,000 (Co-investigator with D. Darwin (PI))

“Assessment of Moisture-Tolerant Coatings for Decreasing Open-Top Construction Time,” August 2015–December 2016, Electric Power Research Institute, \$188,000 (Co-investigator with D. Darwin (PI) and M. Medina).

“Use of Headed Bars as Shear Reinforcement,” January 2014–December 2016, Electric Power Research Institute, \$400,000 (Co-investigator with D. Darwin (PI), R. Lequesne, and A. Lepage).

“Use of Headed Reinforcing Bars to Develop High-Strength Reinforcing Steel,” January 2013–December 2015, Electric Power Research Institute, Concrete Reinforcing Steel Institute Education and Research Foundation, ERICO International Corporation, Headed Reinforcement Corporation, BarSplice Products Inc., \$450,000 (Co-investigator with D. Darwin (PI), and A. Matamoros).

COURSES:

CE 260, Statics and Dynamics, Fall 2024, Spring & Fall 2025, Fall 2026

CE 310, Strength of Materials, Spring & Fall 2012, Summer 2024-2026

CE 412/712, Structural Engineering Materials, Fall 2013-2023

CE 563, Structural Materials II (Concrete Design), Spring & Fall 2012, Spring 2013, Fall 2018, Fall 2020

CE 715/CE 895/C&PE 765, Corrosion Engineering, Spring 2010-2026, Summer 2017

CE 721, Experimental Stress Analysis, Spring 2015, 2017, 2018, 2019, Summer 2018, 2022

CE 764, Advanced Design of Reinforced Concrete Structures, Fall 2011

CE 810, Theory of Elastic Stability, Fall 2011, Summer 2020, Summer 2023

ARCE 350, Building Materials Science, Spring 2022-2024, Spring 2026

ARCH 625, Analysis and Design of Structures for Architects, Fall 2008

GRADUATE STUDENTS:

Chairperson on Examinations:

Ph.D.: Chairperson for three candidates. All three have graduated.

M.S.: Chairperson for six candidates. All six have graduated.

Committee Examinations:

Ph.D.: Committee member for 30 candidates. Twenty-five have graduated and five are currently enrolled.

M.S.: Committee member for 53 candidates. Fifty have graduated and three are currently enrolled.

UNIVERSITY SERVICE:

Faculty Advisor, KU Running Club

2022–Present

Member, Engineering Faculty Library Committee	2016–2019
Faculty Advisor, Engineers Without Borders	2015–Present
Faculty Advisor, Concrete Canoe Team	2013–Present
Faculty Advisor, Chi Epsilon	2013–2017
Member, Engineering Faculty Facilities Committee	2015–2016
Judge, Graduate Engineering Association research competition	2013–Present