**Resuscitation Outcomes Consortium Investigators**

**Alabama Resuscitation Center, University of Alabama at Birmingham, Birmingham, AL:** Jeffrey D. Kerby, MD, PhD, Principal Investigator. **Core Investigators:** Henry E. Wang, MD, Todd B. Brown, MD, MSPH. **Coordinators:** Shannon W. Stephens, EMT-P, Carolyn R. Williams, BSN, BSME, Sandra Caldwell, MA, Katherine R. Lai, BS, Randal Gray, NREMT-P, MA Ed. **EMS Investigators/Collaborators:** Joe E. Acker, EMT-P, MPH, Michael L. Minor, EMT-P, John Reed, BSN, EMT-P. **Hospital Investigators/Collaborators:** Jason Begue, MD, Willie Gilford, MD. **Participating EMS Agencies:** Bessemer Fire Department, Birmingham Fire and Rescue, Center Point Fire District, Pelham Fire Department, Regional Paramedical Services, Rocky Ridge Fire District, Vestavia Hills Fire Department, Hoover Fire Department.

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# Dallas Center for Resuscitation Research, University of Texas Southwestern Medical Center, Dallas, TX: Ahamed H. Idris, MD, Principal Investigator. Core Investigators: Raymond Fowler, MD, Ronna Miller, MD, Joseph Minei, MD, Paul Pepe, MD, Michael Ramsay, MD, Robert Simonson, MD, Jane Wigginton, MD. Coordinators: Sarah Beadle, MD, Dixie Climer, RN, Melinda Moffat, RN, Pamela Owens, David Gallegos, Sandra O’Neill, MS, MA, LP, Ron Smith, MBA. EMS Investigators/Collaborators: Fernando Benitez, MD, Billy Craft, EMTP, Lucy Detamble, RN, Steven Deutsch, EMT-P, Tod Gillam, EMT-P, Tony Harvey, EMTP, Suzanne Hewitt, RN, Marshal Isaacs, MD, Tami Kayea, EMTP, Richard LaChance, EMTP, Thomas Lehman, Dorothy Lemecha, MD, Chris Malvik, EMT-P, Paul Mayer, MD, Jeffrey Metzger, MD, Danny Miller, EMTP, Bobby Muse, EMT-P, Karen Pickard, RN, Bobby Ross, EMT-P, Chris Vinson, EMTP. Hospital Investigators/Collaborators: Steven Arze, MD, Sean Black, MD, Matthew Bush, MD, Ralph Kelly, DO, Edward Thornton, MD, William Elder, MD, John Marcucci, MD, Lawrence Hum, MD, Mark Gamber, MD. Participating EMS Agencies: Carrollton Fire Department, Dallas Fire Rescue, Irving Fire Department, Mesquite Fire Department.

**Milwaukee Resuscitation Research Center, Medical College of Wisconsin, Milwaukee, WI:** Tom P. Aufderheide, MD, Principal Investigator. **Core Investigators:** Ronald G. Pirrallo, MD, MHSA, Karen J. Brasel, MD, MPH, Andrea L. Winthrop, MD, John P. Klein, PhD. **Coordinators:** Joseph Brandt, BS, NREMT-P, Walter Bialkowski, MS, Jennifer Noldin, BS, Christopher Sandoval, BS, Kevin Morrow, MFA,  David J. Kitscha, BS, MS, Barbara J. Burja, BA, EMT, Chris von Briesen, BA, CCRC, Christopher W. Sparks, Pamela Walsh, EMT. **EMS Investigators/Collaborators:** John Chianelli, MS, Rosemarie Forster, MSOLQ, RHIA, EMT-P, Michael Milbrath, EMT-P, Lauryl Pukansky, BS, RHIA, Kenneth Sternig, MS-EHS, BSN, EMT-P,  Eugene Chin, RN, EMT-P, Nancy Frieberg, RN, EMT-P, Kim Krueger, RN, EMT-P, Del Szewczuga, RN, EMT-P, Thomas Duerr, Rebecca Funk, BS, RHIA, EMT-B, Gail Jacobsen, BS, Janis Spitzer, Richard Demien, James Martins, John Cohn, Russell R. Spahn, MA, EMT-P, Mike Jankowski, BA, EMT-P, Timothy James, William E. Wentlandt Jr, MBA, EFO, David Berousek, Brian M. Satula, BA, NREMT, Jay B. Behling, BS, EMT-B, Dean K. Redman, BA, EFO, Steven Hook, BS, CFOD, Andrew Neargarder, Jim Singer, RN. **Hospital Investigators/Collaborators:** Thomas Reminga, MD,  Dennis Shepherd, MD, Peter Holzhauer, MD, Jonathan Rubin, MD, Craig Skold, MD, Orlando Alvarez, MD, Heidi Harkins, MD, Edward Barthell, MD, William Haselow, MD, Albert Yee, MD, John Whitcomb, MD, Eduardo E. Castro, MD, Steven Motarjeme, MD, Paul Coogan, MD, Keith Rader, MD, Jeff Glaspy, MD, Gary Gerschke, MD, Howie Croft, MD, Mike Brin, MD, Cory Wilson, MD, Anne Johnson, MD, William Kumprey, MD. **Participating EMS Agencies:** Cudahy Fire Department, Franklin Fire Department, Greendale Fire Department, Greenfield Fire Department, Hales Corners Fire Department, Milwaukee County Airport Fire Department, Milwaukee Fire Department, North Shore Fire Department, Oak Creek Fire Department, South Milwaukee Fire Department, Wauwatosa Fire Department, West Allis Fire Department.

**Ottawa/OPALS/British Columbia RCC, Ottawa Health Research Institute, University of Ottawa, Ottawa, Ontario and St. Paul’s Hospital, University of British Columbia, British Columbia, Canada:** Ian Stiell, MD, Principal Investigator. **Core Investigators:** Jim Christenson, MD, Christian Vaillancourt, MD. **Coordinators:** Cathy Clement, RN, Tammy Beaudoin, CCHRA, Marc-Andre Da Ponti, A-EMCA, ACP, Julie Cummins, A-EMCA, RN, MSc, Sarah Pennington, RN, Helen Connolly, RN, Stanley Morrow, A-EMCA, ACP, Christine Tym, CHIM, Ghislaine Lepage, CHIM, Jane Banek, CHIM. **EMS Investigators/Collaborators:** Jonathan Dreyer, MD, Douglas Munkley, MD, Jason Prpic, MD, Justin Maloney, MD, Paul Colella, MD, Andrew Affleck, MD, David Waldbillig, MD, Paul Bradford, MD, Kenneth Boyle, EMCA, RRT, CMA, Lorie Luinstra-Toohey, BScN, MHA, John Trickett, BScN, Nicole Sykes, BScN, RN, Elaine Graham, ACP, Kieran Ballah, EMCA, Cathie Hedges, A-EMCA, ACP, Renee MacPhee, PhD, Bob DeRaad, RN, Dug Andrusiek, PCP, Dan Bishop, ACP, Ron Straight, ACP, Brian Twaites, ACP, Stuart Donn, PhD, Laura McCleary, ACP. **Participating EMS Agencies: Ottawa-OPALS**-London Fire Department, Ottawa Fire Rescue, Windsor Fire Rescue, Cambridge Fire Department, Niagara Falls Fire Rescue, St Catharine's Fire Rescue, Sudbury Fire Rescue, Thorold Fire Department, Thunder Bay Fire Rescue, Waterloo Fire Rescue, Welland Fire Rescue, Niagara EMS, Prescott-Russell EMS, Sudbury EMS, Superior North EMS, Waterloo Regional EMS, AA and M Volunteer Ambulance, Essex-Windsor EMS, Harrow Ambulance Service, Ottawa Paramedic Service, Sun Parlour EMS, Thames EMS, Port Colborne Fire. **Vancouver BC-**Abbotsford Fire Department, Aggassiz Valley Fire Department, Burnaby Fire Department, City of North Vancouver Fire Department, BC Ambulance, Coquitlam Fire Department, Delta Fire Department, Langley City Fire Department, Langley Township Fire Department, Maple Ridge Fire Department, Mission Fire Department, New Westminster Fire Department, North Vancouver District Fire Department, Pitt Meadows Fire Department, Port Coquitlam Fire Rescue, Port Moody Fire Department, Richmond Fire Department, Squamish Fire Department, Surrey Fire Department, Vancouver Fire Department, West Vancouver Fire Department, Whistler Fire Department, White Rock Fire Department, Central Saanich Fire Department, Esquimalt Fire Department, Langford Fire Department, Oak Bay Fire Department, Qualicum Beach Fire Department, Sooke V Fire Department, Victoria Fire Department. **BC Heath Authorities:** Fraser Health Authority, Vancouver Island Health Authority, Vancouver Coastal Health Authority and Providence Health Care.

**Pittsburgh Resuscitation Network, the University of Pittsburgh, Pittsburgh, PA:** Clifton Callaway, MD, PhD, Principal Investigator. **Core Investigators:** Samuel Tisherman, MD, Jon Rittenberger, MD, David Hostler, PhD. **Coordinators:** Joseph Condle, Mitch Kampmeyer, Timothy Markham, Maureen Morgan. **EMS Investigators/Collaborators:** Paul Sabol, Gina Sicchitano, Anthony Shrader, Greg Stull, William Groft, Robert McCaughan, Rodney Rohrer, David Fuchs, MD, Francis Guyette, MD, MS, William Jenkins, MD, Ronald Roth, MD, Heather Walker, MD. **Hospital Investigators:** Thomas Campbell, MD, Ankur Doshi, MD, Bruce MacLeod, MD. **Participating EMS Agencies:** Ambulance and Chair, City of Pittsburgh EMS, City of Pittsburgh Fire, Mutual Aid Ambulance.

**Portland Resuscitation Outcomes Consortium, Oregon Health and Science University, Portland, OR:** Mohamud R. Daya, MD, MS, Principal Investigator. **Core Investigators:** Terri A. Schmidt, MD, MS, Craig D. Newgard, MD, MPH, Jerris R. Hedges, MD, MS. **Coordinators:** Denise E. Griffiths, BS, CCRP, Dana M. Zive, MPH, Aaron W. Monnig, EMT-P, Abdolaziz Yekrang, MPA, MA, Brett Tomlin, BS, Michael Kampp, BS, Jenny Cook, BS, Joan Burns, RN, Maria Nelson, MD, Yoko Nakamura, MD. **EMS Investigators/Collaborators:** Jonathan Jui, MD, MPH, Ritu Sahni, MD, MPH, Craig R. Warden, MD, MPH, Skip Freedman, MD, Mike Shertz, MD, Marc D. Muhr, EMT-P2, John A. Stouffer, EMT-P, Jay Cross, EMT-P, Joe Costigan, EMT-P, Kyle Gorman, MBA, EMT-P, Pontine Rosteck, EMT-P, Mike Verkest, EMT-P, Cyndi Newton, EMT-P, Tina Beeler, EMT-P, Karl Koenig, EMT-P, Jan Lee, EMT-P, Roxy Barnes, BSN, Doug Boyce, EMT-P, Brad Allen, EMT-P, TJ Bishop, EMT-P, Mike Hollingsworth, EMT-P, Eric Schult EMT-P, Scott Sullivan, EMT-P, Rick Williams, EMT-P, Steve Dehart, EMT-P, Mark Stevens, EMT-P, Rene Pizzo, EMT-P, Rob Hawks, EMT-P, Adam Glaser, EMT-P, Jonathan Chin, MS, EMT-P, Jason Blount, EMT-P, Gert Zoutendijk, Chris Koppenhafer, Corie Depuy, Kristen Hinds, Trish Noble. **Hospital Investigators/Coordinators:** Lynn Wittwer, MD, Michael Albrich, MD, Tony Carnevale MD, Piroska Schlesinger, BS, Kristen Schmiedeskamp, BS, Amy Reiter, RN, Kathy Arnold, RN, Phyllis Ramey, RN, Roger McDonald, RN, Helen Walsh, RN. **Participating EMS Agencies:** American Medical Response - Clackamas, Clark, and Multnomah Counties, Camas Fire Department, Clackamas County Fire District #1, Clark County Fire District #6, Gresham Fire and Emergency Services, Hillsboro Fire Department, Lake Oswego Fire Department, Metro West Ambulance, North Country Ambulance, Portland Fire and Rescue, Portland International Airport Fire Department, Tualatin Valley Fire and Rescue, Vancouver Fire Department.

**UCSD-San Diego Resuscitation Research Center, University of California at San Diego, San Diego, CA:** Daniel Davis, MD, Principal Investigator. **Core Investigators**: Gary Vilke, MD, James Dunford, MD. **Coordinators**: Donna Kelly Aker, RN, Thea Barsalou, RN. **EMS Investigators/Collaborators**: Bruce Haynes, MD, Brad Schwartz, MD.

**Hospital Investigators**: Don Mebust MD, Robert Bei, MD, Graydon Skeoch, MD, Michele Grad, MD, Ian Grover, MD, Jerrold Glassman, MD, Steven R. Andree, MD, Lisa Morikado, MD, Mark Kramer, MD, Thomas Calkins, MD, Mark Tamsen, MD, William Linnik, MD, Judd Glasser, MD. **Participating EMS Agencies**: El Cajon Fire Department ALS, Julian-Cuyamaca Fire Department ALS, North County Fire Department ALS, Poway Fire Department ALS, San Marcos Fire Department ALS, Santee Fire Department ALS, Viejas Fire Department, City of San Diego Fire Rescue Department, Vista Fire Department ALS.

**Seattle-King County Center for Resuscitation Research at the University of Washington, University of Washington, Seattle, WA:** Peter J. Kudenchuk, MD, Principal Investigator. **Core Investigators:** Tom D. Rea, MD, Michael Copass, MD, Mickey S. Eisenberg, MD. **Coordinator:**  Michele Olsufka, RN, Debi Solberg, RN, MN, Sally Ragsdale, ARNP. **EMS Investigators/Collaborators:** Jonathan Larsen, Mike Helbock. **Participating EMS Agencies:** Bellevue Fire Department, Bothell Fire Department, Burien Fire KCFD 2, Kirkland Fire KCFD 41, Renton Fire and Emergency Services, Snoqualmie Fire, Duvall Fire KCFPD 45, Eastside Fire & Rescue, Enumclaw Fire KCFPD 28, Fall City Fire KCFPD 27, Kent Fire Department, Maple Valley Fire and Life Safety KCFPD #43, Mercer Island Fire Department, KCFD #44 Mountainview, North Highline Fire KCFD 11, Northshore/ Kenmore Fire KCFD 16, Port of Seattle Fire Department, KCFPD #47 Ravensdale/Palmer, Redmond Fire Department, SeaTac Fire Department, Seattle Fire Department, Shoreline Fire KCFD 4, Skykomish Fire KCFD 50, KCFD #20 Skyway, Snoqualmie Pass Fire 51, South King County Medic 1, South King Fire & Rescue, Tukwila Fire Department, Valley Regional Fire Authority, Vashon Island Fire KCFD 13, Woodinville Fire KCFD 36.

**Toronto Regional Resuscitation Research Out of Hospital Network (Toronto Regional RescuNET), University of Toronto, Toronto, Ontario, Canada:** Arthur Slutsky, MD, MASc, Principal Investigator. **Core Investigators:** Laurie J Morrison, MD, MSc, FRCPC, Paul Dorian, MD, MSc, Alan Craig, MScPl, Andrew Baker, MD, FRCPC, Jamie Hutchison, MD, FRCPC, Ori Rotstein, MD, MSc, P. Richard Verbeek, MD, FRCPC, Russell MacDonald, MD, MPH, FCFP, FRCPC, Sandra Black, MD, FRCP(C), Sandro Rizoli, MD, PhD, FRCSC, FACS, Sheldon Cheskes, MD, CCFP (EM), FCFP, Steven Brooks, MD, MHSc. **Coordinators:** Adam Byers, Ahmed Taher, Anuar Turgulov, Blair Bigham, Bruce Cameron, Caitlin Wenkstern, Cathy Zhan, Christopher Foerster, Craig Beers, Jaime Beecroft, Jamie Frank, Malcolm Mercer, Markus Kernen, Michael Grife, Mohammad Qovaizi, Patrick Van Rooyen, Peter DeMaio, Rishab Chadha, Suzanne Chung, Tyrone Perreira, Welson Ryan. **EMS Investigators/Collaborators:** Andy Benson, Dana Bradshaw, Dave Mokedanz, Doug Silver, Greg Sage, Jacob Stevens, Jason Whiteley, Jennifer Shield, John Locke, Judy Moore,  Kenneth Webb, Kevin King, Marty Epp, Michael Feldman, Michael Nemeth, Philip Moran, Richard Renaud, Rob Burgess, Roy Suthons, Russ Olynyk, Steve McNenly, Steve Tyukodi, Terri Burton, Tim Waite, Verena Jones, Warren Beckett. **Hospital Investigators/Coordinators:** Amy Back, Carolyn Vardy, Dina Braga, Don Redelmeier, Donna Chen, Evelina Kadic, Grace Burgess, Hannelore Mueller, Jacob Simonini, Jennifer Walker, Jessica Tyrwhitt, Judith Renton, Julie Spence, Katherine Allan, Kerri Bath, Laura Steeves, Lauren Lewarne, Lesley Ann Molyneaux, Margaret McGrath-Chong, Mariecar Pagulayan, Mark McLennan, Mediha Kadic, Melanie Piette, Nida Shahid, Raj Gobin, Roman Nowickyj, Selamawit Tessema, Shawn Hogan, Steve Driscoll. **Participating EMS Agencies:** Ajax Fire and Emergency Services, Brampton Fire and Emergency Services, Clarington Fire Services, Central East Prehospital Care Program, District of Muskoka, Durham Region Emergency Medical Services, Halton Region Emergency Medical Services, Medavie Emergency Medical Services, Mississauga Fire and Emergency Services, Muskoka Ambulance Communication Center, Muskoka Ambulance Service, Muskoka Emergency Medical Services, Peel Regional Paramedic Services, Pickering Fire Services, Sunnybrook Osler Centre for Prehospital Care, Toronto Emergency Medical Services, Toronto Fire Services, Uxbridge Fire Services, Whitby Fire and Emergency Services.

**Steering Committee**: **Chair:** Myron Weisfeldt, MD, Johns Hopkins University School of Medicine, Baltimore, MD.
**Co-Chair–Cardiac:** Joseph P. Ornato, MD, Virginia Commonwealth University Health System, Richmond, VA.

**National Heart, Lung, and Blood Institute, Bethesda, MD:** George Sopko, MD, MPH, Debra Egan, MPH, David Lathrop, PhD, Alice Mascette, MD, Patrice Desvigne Nickens, MD, Colin Wu, PhD, Phyllis Mitchell, PhD, Tracey Hoke, MD.

**Clinical Trial Center, University of Washington, Department of Biostatistics, Seattle, WA:** Gerald van Belle, PhD, Scott Emerson, MD, PhD, Graham Nichol, MD, MPH, Brian Leroux, PhD, Judy Powell, BSN, Lois Van Ottingham, BSN, Gena Sears, BSN, Siobhan Everson-Stewart, PhD, Robert Schmicker, MS, Andrea Cook, PhD, Kyle Rudser, PhD, Robert B. Ledingham, MS, Ben Bergsten-Buret, Richard Moore, BS, Amy Gest, MPA, Colleen Sitlani, MS, Kent Koprowicz, MS, Liz Thomas, MS, Erin Gabriel, MS, Ken Wu, MS, Danielle Schroeder, BS, Chi Shen, MS, Winnie Kirdpoo, BS, Jackie Berhorst, Anna Leonen, MS, Yang Wang, PhD, Al Hallstrom, PhD.