

# Stanford

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## Kara Motonaga

Clinical Associate Professor, Pediatrics - Cardiology

### CLINICAL OFFICES

- **Pediatric Cardiology**

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### ACADEMIC CONTACT INFORMATION

- **Alternate Contact**

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### Bio

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### CLINICAL FOCUS

- Pediatric Cardiology
- Pediatric Electrophysiology
- Arrhythmias in Adult Congenital Heart Disease

### ACADEMIC APPOINTMENTS

- Clinical Associate Professor, Pediatrics - Cardiology
- Member, Cardiovascular Institute
- Member, Maternal & Child Health Research Institute (MCHRI)

### PROFESSIONAL EDUCATION

- Board Certification: Electrophysiology, International Board of Heart Rhythm Examiners (2015)
- Fellowship: Stanford University Pediatric Cardiology Fellowship (2011) CA
- Honors Scholar, Stanford Clinical Teaching Seminar Series (CTSS) , Medical Education (2018)
- Board Certification: Adult Congenital Heart Disease, American Board of Internal Medicine (2015)
- Medical Education: Albert Einstein College of Medicine (2004) NY
- Internship: Children's Hospital Los Angeles (2005) CA
- Residency: Children's Hospital Los Angeles (2007) CA
- Board Certification: Pediatrics, American Board of Pediatrics (2007)

- Fellowship, Stanford Hospital and Clinics-Pediatric Cardiology , CA (2010)
- Fellowship, Stanford Hospital and Clinics- Pediatric Electrophysiology , CA (2011)
- Board Certification: Pediatric Cardiology, American Board of Pediatrics (2010)
- Board Certification, Adult Congenital Heart Disease , American Board of Internal Medicine (2015)
- CEPS-PC, Certified Electrophysiology Specialist-Pediatric Cardiology, International Board of Heart Rhythm Examiners , Electrophysiology (2015)

## Research & Scholarship

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### CURRENT RESEARCH AND SCHOLARLY INTERESTS

Arrhythmias in Pediatric and Adult Congenital Heart Disease

## Teaching

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### GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Pediatric Cardiology (Fellowship Program)

## Publications

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### PUBLICATIONS

- **Impact of Cardiac Resynchronization Therapy on Heart Transplant-Free Survival in Pediatric and Congenital Heart Disease Patients.** *Circulation. Arrhythmia and electrophysiology*  
Chubb, H., Rosenthal, D. N., Almond, C. S., Ceresnak, S. R., Motonaga, K. S., Arunamata, A. A., Long, J., Trela, A. V., Hanisch, D., McElhinney, D. B., Dubin, A. M.  
2020
- **Pectoral Nerve Blocks Decrease Postoperative Pain and Opioid Use After Pacemaker or Implantable Cardioverter-Defibrillator Placement in Children.** *Heart rhythm*  
Yang, J. K., Char, D. S., Motonaga, K. S., Navaratnam, M., Dubin, A. M., Trela, A., Hanisch, D. G., McFadyen, G., Chubb, H., Goodyer, W., Ceresnak, S. R.  
2020
- **Can the 12-lead ECG distinguish RVOT from aortic cusp PVCs in pediatric patients?** *Pacing and clinical electrophysiology : PACE*  
Clark, B. C., Ceresnak, S. R., Pass, R. H., Nappo, L., Sumihara, K., Dubin, A. M., Motonaga, K., Moak, J. P.  
2020
- **An exploratory assessment of pediatric patient and parent needs after implantable cardioverter defibrillator implant.** *Pacing and clinical electrophysiology : PACE*  
Schneider, L. M., Wong, J. J., Trela, A. n., Hanisch, D. n., Shaw, R. J., Sears, S. F., Motonaga, K. S., Ceresnak, S. R., Hood, K. K., Dubin, A. M.  
2020
- **Loss of Ventricular Pre-excitation During Non-invasive Testing Does Not Exclude High-Risk Accessory Pathways: A Multicenter Study of WPW in Children.** *Heart rhythm*  
Escudero, C. A., Ceresnak, S. R., Collins, K. K., Pass, R. H., Aziz, P. F., Blaufox, A. D., Ortega, M. C., Cannon, B. C., Cohen, M. n., Dechert, B. E., Dubin, A. M., Motonaga, K. S., Epstein, et al  
2020
- **Genotype Predicts Outcomes in Fetuses and Neonates With Severe Congenital Long QT Syndrome.** *JACC. Clinical electrophysiology*  
Moore, J. P., Gallotti, R. G., Shannon, K. M., Bos, J. M., Sadeghi, E. n., Strasburger, J. F., Wakai, R. T., Horigome, H. n., Clur, S. A., Hill, A. C., Shah, M. J., Behere, S. n., Sarquella-Brugada, et al  
2020; 6 (12): 1561–70
- **Cardiac resynchronization and implantable defibrillators in adults with congenital heart disease.** *Heart failure reviews*  
Chubb, H., Motonaga, K. S.  
2019
- **QTc Prolongation and Risk of Torsades de Pointes in Hospitalized Pediatric Oncology Patients.** *The Journal of pediatrics*  
Lim, T. R., Rangaswami, A. A., Dubin, A. M., Kapphahn, K. I., Sakarovitch, C., Long, J., Motonaga, K. S., Trela, T., Ceresnak, S. R.

2019

- **Broad Genetic Testing in a Clinical Setting Uncovers a High Prevalence of Titin Loss-of-Function Variants in Very Early-Onset Atrial Fibrillation.** *Circulation. Genomic and precision medicine*  
Goodyer, W. R., Dunn, K., Caleshu, C., Jackson, M., Wylie, J., Moscarello, T., Platt, J., Reuter, C., Smith, A., Trela, A., Ceresnak, S. R., Motonaga, K. S., Ashley, et al  
2019
- **Road to the Summit May Follow an Eccentric Path.** *Circulation. Arrhythmia and electrophysiology*  
Motonaga, K. S., Hsia, H. H.  
2019; 12 (8): e007691
- **Management of Asymptomatic Wolff-Parkinson-White Pattern by Pediatric Electrophysiologists.** *The Journal of pediatrics*  
Chubb, H., Campbell, R. M., Motonaga, K. S., Ceresnak, S. R., Dubin, A. M.  
2019
- **A randomized placebo-controlled pilot trial shows that intranasal vasopressin improves social deficits in children with autism** *SCIENCE TRANSLATIONAL MEDICINE*  
Parker, K. J., Oztan, O., Libove, R. A., Mohsin, N., Karhson, D. S., Sumiyoshi, R. D., Summers, J. E., Hinman, K. E., Motonaga, K. S., Phillips, J. M., Carson, D. S., Fung, L. K., Garner, et al  
2019; 11 (491)
- **A novel pacing maneuver to verify the postpacing interval minus the tachycardia cycle length while adjusting for decremental conduction: Using "dual-chamber entrainment" for improved supraventricular tachycardia discrimination** *HEART RHYTHM*  
Kaiser, D. W., Nasir, J. M., Liem, L., Brodt, C., Motonaga, K. S., Ceresnak, S. R., Turakhia, M. P., Dubin, A. M.  
2019; 16 (5): 717–23
- **Extended cardiac ambulatory rhythm monitoring in adults with congenital heart disease: Arrhythmia detection and impact of extended monitoring** *CONGENITAL HEART DISEASE*  
Schultz, K. E., Lui, G. K., McElhinney, D. B., Long, J., Balasubramanian, V., Sakarovitch, C., Fernandes, S. M., Dubin, A. M., Rogers, I. S., Romfh, A. W., Motonaga, K. S., Viswanathan, M. N., Ceresnak, et al  
2019; 14 (3): 410–18
- **Extended cardiac ambulatory rhythm monitoring in adults with congenital heart disease: Arrhythmia detection and impact of extended monitoring.** *Congenital heart disease*  
Schultz, K. E., Lui, G. K., McElhinney, D. B., Long, J., Balasubramanian, V., Sakarovitch, C., Fernandes, S. M., Dubin, A. M., Rogers, I. S., Romfh, A. W., Motonaga, K. S., Viswanathan, M. N., Ceresnak, et al  
2019
- **A proposed method for the calculation of age-dependent QRS duration z-scores.** *Journal of electrocardiology*  
Chubb, H. n., Ceresnak, S. R., Motonaga, K. S., Dubin, A. M.  
2019; 58: 132–34
- **A Prospective Assessment of Optimal Mechanical Ventilation Parameters for Pediatric Catheter Ablation** *PEDIATRIC CARDIOLOGY*  
Janson, C. M., Ceresnak, S. R., Choi, J. M., Dubin, A. M., Motonaga, K. S., Mann, G. E., Kahana, M., Fitz-James, I., Wise-Faberowski, L., Kamra, K., Nappo, L., Trela, A., Pass, et al  
2019; 40 (1): 126–32
- **Validation of a novel automated signal analysis tool for ablation of Wolff-Parkinson-White Syndrome.** *PloS one*  
Ceresnak, S. R., Pass, R. H., Dubin, A. M., Yang, L., Motonaga, K. S., Hedlin, H., Avasarala, K., Trela, A., McElhinney, D. B., Janson, C., Nappo, L., Ling, X. B., Gates, et al  
2019; 14 (6): e0217282
- **A randomized placebo-controlled pilot trial shows that intranasal vasopressin improves social deficits in children with autism.** *Science translational medicine*  
Parker, K. J., Oztan, O. n., Libove, R. A., Mohsin, N. n., Karhson, D. S., Sumiyoshi, R. D., Summers, J. E., Hinman, K. E., Motonaga, K. S., Phillips, J. M., Carson, D. S., Fung, L. K., Garner, et al  
2019
- **A Novel Pacing Maneuver to Verify the Post-Pacing Interval Minus the Tachycardia Cycle Length While Adjusting for Decremental Conduction: Using 'Dual Chamber Entrainment' for Improved Supraventricular Tachycardia Discrimination.** *Heart rhythm*  
Kaiser, D. W., Nasir, J. M., Liem, L. B., Brodt, C., Motonaga, K. S., Ceresnak, S. R., Turakhia, M. P., Dubin, A. M.

2018

- **Life-Threatening Event Risk in Children With Wolff-Parkinson-White Syndrome: A Multicenter International Study.** *JACC. Clinical electrophysiology*  
Etheridge, S. P., Escudero, C. A., Blaufox, A. D., Law, I. H., Dechert-Crooks, B. E., Stephenson, E. A., Dubin, A. M., Ceresnak, S. R., Motonaga, K. S., Skinner, J. R., Marcondes, L. D., Perry, J. C., Collins, et al  
2018; 4 (4): 433–44
- **Antibiotic Prophylaxis Practices in Pediatric Cardiac Implantable Electronic Device Procedures: A Survey of the Pediatric And Congenital Electrophysiology Society (PACES).** *Pediatric cardiology*  
Chen, S. Y., Ceresnak, S. R., Motonaga, K. S., Trela, A., Hanisch, D., Dubin, A. M.  
2018
- **THE DEVELOPMENT AND EFFICACY OF A PEDIATRIC CARDIOLOGY FELLOWSHIP ONLINE PREPARATORY COURSE**  
Motonaga, K., Sacks, L., Olson, I., Balasubramanian, S., Chen, S., Peng, L., Feinstein, J., Silverman, N., Hanley, F., Axelrod, D., Krawczeski, C., Ceresnak, S.  
ELSEVIER SCIENCE INC.2018: 2622
- **Bridge to success: A better method of cryoablation for atrioventricular nodal reentrant tachycardia in children** *HEART RHYTHM*  
Reddy, C. D., Ceresnak, S. R., Motonaga, K. S., Avasarala, K., Feller, C., Trela, A., Hanisch, D., Dubin, A. M.  
2017; 14 (11): 1649–54
- **A multicenter review of ablation in the aortic cusps in young people.** *Pacing and clinical electrophysiology : PACE*  
Nguyen, M. B., Ceresnak, S. R., Janson, C. M., Fishberger, S. B., Love, B. A., Blaufox, A. D., Motonaga, K. S., Dubin, A. M., Nappo, L., Pass, R. H.  
2017
- **Ventricular pacing in single ventricles-A bad combination.** *Heart rhythm*  
Bulic, A., Zimmerman, F. J., Ceresnak, S. R., Shetty, I., Motonaga, K. S., Freter, A., Trela, A. V., Hanisch, D., Russo, L., Avasarala, K., Dubin, A. M.  
2017; 14 (6): 853-857
- **Advances in Pediatric Cardiology Boot Camp: Boot Camp Training Promotes Fellowship Readiness and Enables Retention of Knowledge.** *Pediatric cardiology*  
Ceresnak, S. R., Axelrod, D. M., Sacks, L. D., Motonaga, K. S., Johnson, E. R., Krawczeski, C. D.  
2017
- **Intranasal oxytocin treatment for social deficits and biomarkers of response in children with autism.** *Proceedings of the National Academy of Sciences*  
Parker, K. J., Oztan, O., Libove, R. A., Sumiyoshi, R. D., Jackson, L. P., Karhson, D. S., Summers, J. E., Hinman, K. E., Motonaga, K. S., Phillips, J. M., Carson, D. S., Garner, J. P., Hardan, et al  
2017; 114 (30): 8119-8124
- **Tachycardia cycle and atrioventricular nodal conduction properties in children with supraventricular tachycardia.** *Pacing and clinical electrophysiology : PACE*  
Mills, M., Dubin, A. M., Motonaga, K. S., Ceresnak, S. R.  
2017; 40 (6): 745–47
- **Intranasal oxytocin treatment for social deficits and biomarkers of response in children with autism.** *Proceedings of the National Academy of Sciences of the United States of America*  
Parker, K. J., Oztan, O. n., Libove, R. A., Sumiyoshi, R. D., Jackson, L. P., Karhson, D. S., Summers, J. E., Hinman, K. E., Motonaga, K. S., Phillips, J. M., Carson, D. S., Garner, J. P., Hardan, et al  
2017; 114 (30): 8119–24
- **Is There a Difference in Tachycardia Cycle Length during SVT in Children with AVRT and AVNRT?** *Pacing and clinical electrophysiology : PACE*  
Mills, M. F., Motonaga, K. S., Trela, A., Dubin, A. M., Avasarala, K., Ceresnak, S. R.  
2016
- **Risk of cardiac disease and observations on lack of potential predictors by clinical history among children presenting for cardiac evaluation of mid-exertional syncope** *CARDIOLOGY IN THE YOUNG*  
Miyake, C. Y., Motonaga, K. S., Fischer-Colbrie, M. E., Chen, L., Hanisch, D. G., Balise, R. R., Kim, J. J., Dubin, A. M.  
2016; 26 (5): 894-900
- **Electrocardiographic repolarization abnormalities and increased risk of life-threatening arrhythmias in children with dilated cardiomyopathy** *HEART RHYTHM*  
Chen, S., Motonaga, K. S., Hollander, S. A., Almond, C. S., Rosenthal, D. N., Kaufman, B. D., May, L. J., Avasarala, K., Dao, D. T., Dubin, A. M., Ceresnak, S. R.

2016; 13 (6): 1289-1296

- **Pediatric Cardiology Boot Camp: Description and Evaluation of a Novel Intensive Training Program for Pediatric Cardiology Trainees** *PEDIATRIC CARDIOLOGY*  
Ceresnak, S. R., Axelrod, D. M., Motonaga, K. S., Johnson, E. R., Krawczeski, C. D.  
2016; 37 (5): 834-844
- **Unusual Outflow Tract Ventricular Tachycardia.** *Cardiac electrophysiology clinics*  
Motonaga, K. S., Ceresnak, S. R., Hsia, H. H.  
2016; 8 (1): 79-88
- **A Pilot Study Assessing ECG versus ECHO Ventriculoventricular Optimization in Pediatric Resynchronization Patients.** *Journal of cardiovascular electrophysiology*  
Punn, R., Hanisch, D., Motonaga, K. S., Rosenthal, D. N., Ceresnak, S. R., Dubin, A. M.  
2016; 27 (2): 210-216
- **50 is the new 70: Short ventriculoatrial times are common in children with atrioventricular reciprocating tachycardia.** *Heart rhythm*  
Ceresnak, S. R., Doan, L. N., Motonaga, K. S., Avasarala, K., Trela, A. V., Reddy, C. D., Dubin, A. M.  
2015; 12 (7): 1541-1547
- **Right-sided subcutaneous implantable cardioverter-defibrillator placement in a patient with dextrocardia, tetralogy of Fallot, and conduction disease.** *HeartRhythm case reports*  
Ceresnak, S. R., Motonaga, K. S., Rogers, I. S., Viswanathan, M. N.  
2015; 1 (4): 186-189
- **Success Rates in Pediatric WPW Ablation Are Improved with 3-Dimensional Mapping Systems Compared with Fluoroscopy Alone: A Multicenter Study** *JOURNAL OF CARDIOVASCULAR ELECTROPHYSIOLOGY*  
Ceresnak, S. R., Dubin, A. M., Kim, J. J., Valdes, S. O., Fishberger, S. B., Shetty, I., Zimmerman, F., Tanel, R. E., Epstein, M. R., Motonaga, K. S., Capone, C. A., Nappo, L., Gates, et al  
2015; 26 (4): 412-416
- **Diminished exercise capacity and chronotropic incompetence in pediatric patients with congenital complete heart block and chronic right ventricular pacing.** *Heart rhythm*  
Motonaga, K. S., Punn, R., Axelrod, D. M., Ceresnak, S. R., Hanisch, D., Kazmucha, J. A., Dubin, A. M.  
2015; 12 (3): 560-565
- **Ventricular lead redundancy to prevent cardiovascular events and sudden death from lead fracture in pacemaker-dependent children.** *Heart rhythm*  
Ceresnak, S. R., Perera, J. L., Motonaga, K. S., Avasarala, K., Malloy-Walton, L., Hanisch, D., Punn, R., Maeda, K., Reddy, V. M., Doan, L. N., Kirby, K., Dubin, A. M.  
2015; 12 (1): 111-116
- **Cardiac resynchronization therapy for pediatric patients with heart failure and congenital heart disease: a reappraisal of results.** *Circulation*  
Motonaga, K. S., Dubin, A. M.  
2014; 129 (18): 1879-1891
- **Diagnosis and Management of Pediatric Brugada Syndrome: A Survey of Pediatric Electrophysiologists** *PACE-PACING AND CLINICAL ELECTROPHYSIOLOGY*  
Harris, B. U., Miyake, C. Y., Motonaga, K. S., Dubin, A. M.  
2014; 37 (5): 638-642
- **In-hospital arrhythmia development and outcomes in pediatric patients with acute myocarditis.** *American journal of cardiology*  
Miyake, C. Y., Teele, S. A., Chen, L., Motonaga, K. S., Dubin, A. M., Balasubramanian, S., Balise, R. R., Rosenthal, D. N., Alexander, M. E., Walsh, E. P., Mah, D. Y.  
2014; 113 (3): 535-540
- **Electrophysiologic therapeutics in heart failure in adult congenital heart disease.** *Heart failure clinics*  
Motonaga, K. S., Khairy, P., Dubin, A. M.  
2014; 10 (1): 69-89
- **Do pediatric electrophysiologists read pre-participation screening electrocardiograms more accurately than general pediatric cardiologists?** *journal of pediatrics*  
Harbison, A. L., Hill, A. C., Motonaga, K. S., Miyake, C. Y., Dubin, A. M.

2013; 163 (6): 1775-1777

- **The effects of ketamine on dexmedetomidine-induced electrophysiologic changes in children.** *Paediatric anaesthesia*  
Char, D., Drover, D. R., Motonaga, K. S., Gupta, S., Miyake, C. Y., Dubin, A. M., Hammer, G. B.  
2013; 23 (10): 898-905
- **Infant ventricular fibrillation after ST-segment changes and QRS widening: a new cause of sudden infant death?** *Circulation. Arrhythmia and electrophysiology*  
Miyake, C. Y., Davis, A. M., Motonaga, K. S., Dubin, A. M., Berul, C. I., Cecchin, F.  
2013; 6 (4): 712-718
- **Insights into dyssynchrony in Hypoplastic Left Heart Syndrome** *HEART RHYTHM*  
Motonaga, K. S., Miyake, C. Y., Punn, R., Rosenthal, D. N., Dubin, A. M.  
2012; 9 (12): 2010-2015
- **Are wide complex tachycardia algorithms applicable in children and patients with congenital heart disease?** *JOURNAL OF ELECTROCARDIOLOGY*  
Ceresnak, S. R., Liberman, L., Avasarala, K., Tanel, R., Motonaga, K. S., Dubin, A. M.  
2010; 43 (6): 694-700