**Anuradha Karunanidhi, BPharm, MS**

Email: [ank90@pitt.edu](mailto:ank90@pitt.edu)

……………………………………………………………………………………………………....

Education

1999-2001M.S through research in Biochemical engineering & Biotechnology

Department of chemical engineering, Indian Institute of Technology Madras (IITM), INDIA

1994-1998 Bachelor of Pharmacy -The Tamilnadu Dr.M.G.R. Medical University, Chennai-INDIA

##### Research/Teaching Experience

October 2018- current **Senior Laboratory Manager, Research V**

Department of Pediatrics-Human Genetics

University of Pittsburgh, Pittsburgh, PA

April 2016-September 2018 **Laboratory Manager, Research IV**

Department of Pediatrics-Human Genetics

University of Pittsburgh, Pittsburgh, PA

June 2010-March 2016 **Research Technician III**

Department of Pediatrics-Human Genetics

University of Pittsburgh, Pittsburgh, PA

March 2009 –May 2010 **Research Specialist IV**

Department of Chemical and Petroleum Engineering

University of Pittsburgh, Pittsburgh, PA

October 2007 –March 2009 **Research Associate III**

Bone Tissue Engineering Center, Department of Biomedical Eng.,

Carnegie Mellon University, Pittsburgh, PA.

July 2005- Jan 2006 **Research Technician II**

Department of Periodontics, School of Dental Medicine, University of Pittsburgh, Pittsburgh, PA.

June 2002- July 2004 **Lecturer & Project Supervisor** for postgraduates at the Department of Biotechnology, College of Biomedical Science, Technology & Research, Sri Ramachandra Medical College & Research Institute (Deemed University) and Loyola College, Chennai- INDIA

January 1999 to June 2001 **Postgraduate Research Fellow**, at the Biochemical Engineering division, Biotechnology Research Center, Department of Chemical engineering, I.I.T, Madras-INDIA

**Research Interests**

* Measuring cellular function of mitochondrial dysfunction in fibroblast cell lines
* Therapeutic efficacy of pharmaceutical compounds on Fatty acid oxidation disorder using invitro models.
* Optimization of Anaplerotic Agents for Treating β-Oxidation Disorders.

**Awards & Honors**

**SSIEM, International conference held in Jerusalem, Israel 2023**

Best ranked poster award

**INFORM, International conference held in Jerusalem, Israel 2023**

Received travel award for presenting in lecture series

Best poster award & distinguished achievement in research presented by the scientific board of INFORM in sponsorship with Nestle Health science

**University of Pittsburgh**

Nominated by Dept. of Pediatrics for Chancellor Award under Staff Excellent Mentor category 2018

Nominated by Dept. of Pediatrics for Chancellor Award under Staff Excellent Mentor category 2017

Nominated by Dept. of Pediatrics for Chancellor Award under Staff Research Impact category 2016

**Carnegie Mellon University**

Nominated by Bone Tissue Engineering Center for CMU- CIT Staff Recognition Award 2008.

**International Students Scholarship**

Participated in International event on Environmental contamination in Central and Eastern Europe held in 2000 at Prague, Czech Republic.

#### Research Fellowship

Graduate Aptitude Test for Engineering (GATE) 1998 qualified -INDIA

**Technical Experience**

**Molecular biology:**

DNA recombination, plasmid construction, subcloning, stable/transient transfection by Lipofectamine, baculovirus and Electroporation, ligation, transformation, site-directed mutagenesis, siRNA, PCR, RT-PCR, DNA and RNA isolation, protein over expression in prokaryotic and eukaryotic system, protein extraction and purification. Subcellular fractionation of cells and tissues for organelle isolation like mitochondria/peroxisome, Mitochondrial assays and limited proteolysis assay.

**Cell culture:**

Cell lines/primary cell culture (insect cells, murine and mammalian cells), cryopreservation, cell growth curve, cell apoptosis and differentiation assays, immunofluorescent double/triple staining, cell sorting by FACS.

**Microscopy:**

Phase contrast, light microscopy, fluorescent/laser confocal microscopy, scanning electron microscopy (SEM)

**Immunology:**

Cell culture and transfection, luciferase assay, ELISA, immunoprecipitation, Western blotting, immunocytochemistry, immunohistochemistry, flow cytometry, Histological techniques for sample/section preparation and HE staining, immunohistological double/triple staining. Antibody production and testing.

**Administrative role**

* Lab management- equipment purchase, maintenance, chemical inventory
* Interview candidates for Tech position
* Annual evaluation of Techs
* Ordering general supplies
* Chemical stocks
* Routine lab cleanliness, disposing of bio-hazardous wastes

**Peer reviewed Articles**

1. **Karunanidhi A**, Basu S, Zhao XJ, D'Annibale O, Van't Land C, Vockley J, Mohsen AW. Heptanoic and medium branched-chain fatty acids as anaplerotic treatment for medium chain acyl-CoA dehydrogenase deficiency. Mol Genet Metab. 2023 Aug 25;140(3):107689. doi: 10.1016/j.ymgme.2023.107689. Epub ahead of print. PMID: 37660571.
2. Zhao XJ, Mohsen AW, Mihalik S, Solo K, Basu S, Aliu E, Shi H, Kochersberger C, **Karunanidhi A**, Van't Land C, Coughlan KA, Siddiqui S, Rice LM, Hillier S, Guadagnin E, DeAntonis C, Giangrande PH, Martini PGV, Vockley J. Messenger RNA rescues medium-chain acyl-CoA dehydrogenase deficiency in fibroblasts from patients and a murine model. Hum Mol Genet. 2023 Jul 4;32(14):2347-2356. doi: 10.1093/hmg/ddad076. Erratum in: Hum Mol Genet. 2023 Aug 7;32(16):2679. PMID: 37162351; PMCID: PMC10321387.
3. Zhao XJ, Mohsen AW, Mihalik S, Solo K, Aliu E, Shi H, Basu S, Kochersperger C, Van't Land C, **Karunanidhi A**, Coughlan KA, Siddiqui S, Rice LM, Hillier S, Guadagnin E, Giangrande PH, Martini PGV, Vockley J. Synthetic mRNA rescues very long-chain acyl-CoA dehydrogenase deficiency in patient fibroblasts and a murine model. Mol Genet Metab. 2023 Jan;138(1):106982. doi: 10.1016/j.ymgme.2022.106982. Epub 2022 Dec 23. PMID: 36580829; PMCID: PMC9877169.
4. Phua YL, D'Annibale OM, **Karunanidhi A**, Mohsen AW, Kirmse B, Dobrowolski SF, Vockley J. A multiomics approach to understanding pathology of Combined D,L-2- Hydroxyglutaric Aciduria and phenylbutyrate as potential treatment. bioRxiv [Preprint]. 2023 Feb 3:2023.02.02.526527. doi: 10.1101/2023.02.02.526527. PMID: 36778323; PMCID: PMC9915603.
5. **Karunanidhi A,** Van't Land C, Rajasundaram D, Grings M, Vockley J, Mohsen AW. Medium branched chain fatty acids improve the profile of tricarboxylic acid cycle intermediates in mitochondrial fatty acid β-oxidation deficient cells: A comparative study. J Inherit Metab Dis. 2022 May;45(3):541-556. doi: 10.1002/jimd.12480. Epub 2022 Feb 2. PMID: 35076099; PMCID: PMC9090965.
6. Heiman P, Mohsen AW, **Karunanidhi A**, St Croix C, Watkins S, Koppes E, Haas R, Vockley J, Ghaloul-Gonzalez L. Mitochondrial dysfunction associated with TANGO2 deficiency. Sci Rep. 2022 Feb 23;12(1):3045. doi: 10.1038/s41598-022-07076-9.
7. Wolfe R, Heiman P, D'Annibale O, **Karunanidhi A**, Powers A, Mcguire M, Seminotti B, Dobrowolski SF, Reyes-Múgica M, Torok KS, Mohsen AW, Vockley J, Ghaloul-Gonzalez L. ITCH deficiency clinical phenotype expansion and mitochondrial dysfunction. Mol Genet Metab Rep. 2022 Oct 29;33:100932. doi: 10.1016/j.ymgmr.2022.100932. PMID: 36338154; PMCID: PMC9634006.
8. D'Annibale OM, Phua YL, Van't Land C, **Karunanidhi A**, Dorenbaum A, Mohsen AW, Vockley J. Treatment of VLCAD-Deficient Patient Fibroblasts with Peroxisome Proliferator-Activated Receptor δ Agonist Improves Cellular Bioenergetics. Cells. 2022 Aug 24;11(17):2635. doi: 10.3390/cells11172635. PMID: 36078043; PMCID: PMC9454759.
9. D'Annibale OM, Koppes EA, Alodaib AN, Kochersperger C, **Karunanidhi A**, Mohsen AW, Vockley J. Characterization of variants of uncertain significance in isovaleryl-CoA dehydrogenase identified through newborn screening: An approach for faster analysis. Mol Genet Metab. 2021 Sep-Oct;134(1-2):29-36. doi: 10.1016/j.ymgme.2021.08.012. Epub 2021 Aug 30. PMID: 34535384; PMCID: PMC8578405.
10. Sinsheimer A, Mohsen AW, Bloom K, **Karunanidhi A**, Bharathi S, Wu YL, Schiff M, Wang Y, Goetzman ES, Ghaloul-Gonzalez L, Vockley J. Development and characterization of a mouse model for Acad9 deficiency. Mol Genet Metab. 2021 Sep-Oct;134(1-2):156-163. doi: 10.1016/j.ymgme.2021.09.002. Epub 2021 Sep 14. PMID: 34556413; PMCID: PMC8588265
11. Bloom K, **Karunanidhi A,** Tobita K, Hoppel C, Thiels E, et al. (2020) ACAD10 protein expression and Neurobehavioral assessment of *Acad10*-deficient mice. PLOS ONE 15(12)
12. Steven F. Dobrowolskia, Ahmad Alodaibb, **Anuradha Karunanidhi**, Shrabini Basu, Meghan Holeckob, Uta Lichter-Koneckib, Kirk L. Pappand, Jerry Vockley. (2020) Mitochondrial energetics is impaired in very long-chain acyl-CoA dehydrogenase deficiency and can be rescued by treatment with mitochondria-targeted electron scavengers. *Molecular Genetics and Metabolism* 129 (2020):272-277.
13. Lina Ghaloul-Gonzalez, Al-Walid Mohsen, **Anuradha Karunanidhi**, Bianca Seminotti, Hey Chong, Suneeta Madan-Khetarpal, Jessica Sebastian, Catherine Walsh Vockley, Miguel Reyes-Múgica, MarkT.Vander Lugt & Jerry Vockley. (2019). Reticular Dysgenesis and Mitochondriopathy Induced by Adenylate Kinase 2 Defciency with Atypical Presentation. *Nature* *Scientific Reports* 9:15739
14. Mateus Grings, Bianca Seminotti, **Anuradha Karunanidhi**, Lina Ghaloul-Gonzalez, Al-Walid Mohsen, Peter Wipf, Johan Palmfeldt, Jerry Vockley & Guilhian Leipnitz. (2019). [ETHE1 and MOCS1 deficiencies: Disruption of mitochondrial bioenergetics, dynamics, redox homeostasis and endoplasmic reticulum-mitochondria crosstalk in patient fibroblasts](https://www.researchgate.net/publication/335583182_ETHE1_and_MOCS1_deficiencies_Disruption_of_mitochondrial_bioenergetics_dynamics_redox_homeostasis_and_endoplasmic_reticulum-mitochondria_crosstalk_in_patient_fibroblasts).*.Nature* *Scientific Reports* 9 :12651
15. Bianca Seminotti, Guilhian Leipnitz, **Anuradha Karunanidhi**, Catherine Kochersperger, Vera Y. Roginskaya, Shrabani Basu, Yudong Wang, Peter Wipf, Bennett Van Houten, Al-Walid Mohsen and Jerry Vockley. Mitochondrial energetics is impaired in very long-chain acyl-CoA dehydrogenase deficiency and can be rescued by treatment with mitochondria-targeted electron scavengers. *Human Molecular Genetics*, 2019, Vol. 28 (6):928–941
16. Leipnitz, G., Mohsen, A.-W., **Karunanidhi, A**., Seminotti, B., Roginskaya V., Markantone, D., Grings, M., Mihalik, S., Wipf, P., Van Houten, B., Vockley, J.\* (2018). Evaluation of mitochondrial bioenergetics, dynamics, endoplasmic reticulum-mitochondria crosstalk, and reactive oxygen species in fibroblasts from patients with complex I deficiency. *Nature* *Scientific Reports* 8(1):1165
17. Kaitlyn Bloom; Al-Walid Mohsen; **Anuradha Karunanidhi**; Dina El Demellawy; Miguel Reyes-Múgica; Yudong Wang; Lina Ghaloul-Gonzalez; Chikara Otsubo; Kimi Tobita; Radhika Muzumdar; Zhenwei Gong; Emir Tas; Jie Chen; Michael Bennett; Charles Hoppel; Jerry Vockley. “ACAD10 genetic defect linked to insulin resistance and obesity". *Journal of Inherited Metabolic Disease*. 2016
18. [Manuel Schiff](http://www.pubfacts.com/author/Manuel+Schiff), [Birgit Haberberger](http://www.pubfacts.com/author/Birgit+Haberberger), [Chuanwu Xia](http://www.pubfacts.com/author/Chuanwu+Xia), [Al-Walid Mohsen](http://www.pubfacts.com/author/Al-Walid+Mohsen), [Eric S Goetzman](http://www.pubfacts.com/author/Eric+S+Goetzman), [Yudong Wang](http://www.pubfacts.com/author/Yudong+Wang), [Radha Uppala](http://www.pubfacts.com/author/Radha+Uppala), [Yuxun Zhang](http://www.pubfacts.com/author/Yuxun+Zhang), [**Anuradha Karunanidh**i](http://www.pubfacts.com/author/Anuradha+Karunanidhi), [Dolly Prabhu](http://www.pubfacts.com/author/Dolly+Prabhu), [Hana Alharbi](http://www.pubfacts.com/author/Hana+Alharbi), [Edward V Prochownik](http://www.pubfacts.com/author/Edward+V+Prochownik), [Tobias Haack](http://www.pubfacts.com/author/Tobias+Haack), [Johannes Häberle](http://www.pubfacts.com/author/Johannes+Häberle), [Arnold Munnich](http://www.pubfacts.com/author/Arnold+Munnich), [Agnes Rötig](http://www.pubfacts.com/author/Agnes+Rötig), [Robert W Taylor](http://www.pubfacts.com/author/Robert+W+Taylor), [Robert D Nicholls](http://www.pubfacts.com/author/Robert+D+Nicholls), [Jung-Ja Kim](http://www.pubfacts.com/author/Jung-Ja+Kim), [Holger Prokisch](http://www.pubfacts.com/author/Holger+Prokisch), [Jerry Vockley](http://www.pubfacts.com/author/Jerry+Vockley). “[Complex I assembly function and fatty acid oxidation enzyme activity of ACAD9 both contribute to disease severity in ACAD9 deficiency”.](http://www.pubfacts.com/detail/25721401/Complex-I-assembly-function-and-fatty-acid-oxidation-enzyme-activity-of-ACAD9-both-contribute-to-dis) *Hum. Mol. Genet*. 2015Jun 26; 24(11):3238-47.
19. [Eric S Goetzman](http://www.pubfacts.com/author/Eric+S+Goetzman), [John F Alcorn](http://www.pubfacts.com/author/John+F+Alcorn), [Sivakama S Bharathi](http://www.pubfacts.com/author/Sivakama+S+Bharathi), [Radha Uppala](http://www.pubfacts.com/author/Radha+Uppala), [Kevin J McHugh](http://www.pubfacts.com/author/Kevin+J+McHugh), [Beata Kosmider](http://www.pubfacts.com/author/Beata+Kosmider), [Rimei Chen](http://www.pubfacts.com/author/Rimei+Chen), [Yi Y Zuo](http://www.pubfacts.com/author/Yi+Y+Zuo), [Megan E Beck](http://www.pubfacts.com/author/Megan+E+Beck), [Richard W McKinney](http://www.pubfacts.com/author/Richard+W+McKinney), [Helen Skilling](http://www.pubfacts.com/author/Helen+Skilling), [Kristen R Suhrie](http://www.pubfacts.com/author/Kristen+R+Suhrie), [**Anuradha Karunanidh**i](http://www.pubfacts.com/author/Anuradha+Karunanidhi), [Renita Yeasted](http://www.pubfacts.com/author/Renita+Yeasted), [Chikara Otsubo](http://www.pubfacts.com/author/Chikara+Otsubo), [Bryon Ellis](http://www.pubfacts.com/author/Bryon+Ellis), [Yulia Y Tyurina](http://www.pubfacts.com/author/Yulia+Y+Tyurina), [Valerian E Kagan](http://www.pubfacts.com/author/Valerian+E+Kagan), [Rama K Mallampalli](http://www.pubfacts.com/author/Rama+K+Mallampalli), [Jerry Vockley](http://www.pubfacts.com/author/Jerry+Vockley). (2014). “[Long-chain acyl-CoA dehydrogenase deficiency as a cause of pulmonary surfactant dysfunction”.](http://www.pubfacts.com/detail/24591516/Long-chain-acyl-CoA-dehydrogenase-deficiency-as-a-cause-of-pulmonary-surfactant-dysfunction) *J. Biol. Chem*. 289(15):10668-79.
20. Manuel Schiff, Al-Walid Mohsen, **Anuradha Karunanidhi**, Elizabeth McCracken, Renita Yeasted, Jerry Vockley. “Molecular and cellular pathology of very-long-chain acyl-CoA dehydrogenase deficiency” Original Research Article. *Molecular Genetics and Metabolism*, *Volume 109, Issue 1*, *May* 2013, *Pages 21-27*
21. [Young CS](http://www.ncbi.nlm.nih.gov/pubmed?term=Young%20CS%5BAuthor%5D&cauthor=true&cauthor_uid=21350649), [Bradica G](http://www.ncbi.nlm.nih.gov/pubmed?term=Bradica%20G%5BAuthor%5D&cauthor=true&cauthor_uid=21350649), [Hart CE](http://www.ncbi.nlm.nih.gov/pubmed?term=Hart%20CE%5BAuthor%5D&cauthor=true&cauthor_uid=21350649), [**Karunanidhi A**](http://www.ncbi.nlm.nih.gov/pubmed?term=Karunanidhi%20A%5BAuthor%5D&cauthor=true&cauthor_uid=21350649), [Street RM](http://www.ncbi.nlm.nih.gov/pubmed?term=Street%20RM%5BAuthor%5D&cauthor=true&cauthor_uid=21350649), [Schutte L](http://www.ncbi.nlm.nih.gov/pubmed?term=Schutte%20L%5BAuthor%5D&cauthor=true&cauthor_uid=21350649), [Hollinger JO](http://www.ncbi.nlm.nih.gov/pubmed?term=Hollinger%20JO%5BAuthor%5D&cauthor=true&cauthor_uid=21350649). “Preclinical Toxicology Studies of Recombinant Human Platelet-Derived Growth Factor-BB Either Alone or in Combination with Beta-Tricalcium Phosphate and Type I Collagen”. [J Tissue Eng.](http://www.ncbi.nlm.nih.gov/pubmed/21350649?dopt=Abstract) Jan 10;2010
22. DanielJ. Siegwart, Abiraman Srinivasan, Sidi Bencherif, **Anuradha Karunanidhi**, Jung Kwon Oh, Swaroopa Vaidya, Rongchao Jin, Jeffrey O. Hollinger and Krzysztof Matyjaszewski**.** “Cellular Uptake of Functional Nanogels Prepared by Inverse Miniemulsion ATRP with Encapsulated Proteins, Carbohydrates, and Gold Nanoparticles”. Biomacromolecules, 2009, 10 (8), pp 2300–2309
23. **Anuradha Karunanidhi,** “Extractive fermentation of ethanol in an aqueous two-phase System by *saccharomyces cerevisiae* NCIM 3288”. Advanced Biotech Magazine for lifescience and technology, Volume VI issue 12,11p June 2008.
24. H. Wilson Burgess, James Mackrell, Derek Toms, **Anuradha Karunanidhi**, Swaroopa Vaidya, Jeffrey O. Hollinger, Teri A. Grieb, and Greg P. Bertenshaw. **Response of Bone Subjected to Optimized High Dose Irradiation** *J Biomater Appl* November 11, **2008.**
25. **Anuradha Karunanidhi,** “**Bioinformatics –A virtual Tour”**

‘Advanced Biotech’-India’s Biotechnology Magazine, Volume II Issue 3, 21p, **2003.**

**Conference Abstract**

1. Heptanoic and medium branched-chain fatty acids treatment ameliorates lysine hyposuccinylation in human MCAD deficient fibroblast cells and with triheptanoin in murine knock out model. **Anuradha Karunanidhi**, Shakuntala Basu, Xue-Jun Zhao, Clinton Van’t Land, Jerry Vockley, and Al-Walid Mohsen. Society for the Study of Inborn Errors of Metabolism (SSIEM) meeting, 2023. TheInternational Network for Fatty Acid Oxidation Research and Management (INFORM) meeting 2023.
2. Effect of triheptanoin and medium branched-chain fatty acids on lysine succinylation in human MCAD deficient fibroblast cells and murine ko model. Anuradha Karunanidhi, Shakuntala Basu, Xue-Jun Zhao, Clinton Van’t Land, Jerry Vockley, and Al-Walid Mohsen. Society for Inherited Metabolic Disorders (SIMD) meeting 2023.
3. A new class of anaplerotic compounds restores cellular lysine succinylation and antigenic signal of specific Electron Transport Chain subunits in cells from propionic acidemia patients. Al-Walid Mohsen, **Anuradha Karunanidhi**, and Bianca Seminotti, Jerry Vockley. Society for the Study of Inborn Errors of Metabolism (SSIEM) meeting, 2022.
4. Restoring succinyllysine antigenic signal and improving O2 consumption of CPT II deficient cells treated with anaplerotic compounds. B. Seminotti, **A. Karunanidhi,** J. Vockley, and A.-W. Mohsen. Society for the Study of Inborn Errors of Metabolism (SSIEM) meeting, 2022.
5. Heptanoate and derivatives as therapy for mcad deficiency: preclinical evidence of efficacy and implications for anaplerotic drug class therapy. Al-Walid Mohsen, Jerry Vockley, **Anuradha Karunanidhi**, Shakuntala Basu Xue-Jun Zhao1, Olivia D’Annable. Society for Inherited Metabolic Disorders (SIMD) meeting 2022.
6. Preclinical evidence of efficacy of heptanoate and derivatives as anaplerotic therapy for medium chain acyl-CoA dehydrogenase deficiency. Al-Walid Mohsen, Jerry Vockley, **Anuradha Karunanidhi**, Shakuntala Basu, Xue-Jun Zhao, Olivia D’Annable, Clinton Van't Land. International Congress of Inborn Errors of Metabolism (ICIEM) meeting, 2021.
7. Potential Therapies for Mitochondrial Bioenergetics Dysfunction in Fibroblasts from a 2-Hydroxyglutaric Aciduria Patient. Yu Leng Phua, **Anuradha Karunanidhi**, Steven F. Dobrowolski, Ben Franks-Meinert, Al-Walid Mohsen, Jerry Vockley. Society for Inherited Metabolic Disorders (SIMD) meeting, 2020.
8. Effect of Trimetazidine on Mitochondrial Bioenergetics in Very Long Chain Acyl-CoA Dehydrogenase deficient cells. Al-Walid Mohsen, **Anuradha Karunanidhi**, Yu Leng Phua, Jerry Vockley. NHLBI Mitochondrial Biology Symposium, September 2019.
9. Optimizing Anaplerotic Therapy for Fatty Acid Beta-Oxidation Disorders: A Comparative Study with Medium Branched Chain Fatty Acids. Al-Walid Mohsen, **Anuradha Karunanidhi,** Clinton Van't Land, Jerry Vockley. NHLBI Mitochondrial Biology Symposium, September 2019.
10. Designer triglycerides: A practical approach to deliver disease-specific alternative fatty acids, bypassing the metabolic block in patients with fatty acids oxidation disorders. Al-Walid Mohsen, **Anuradha Karunanidhi**, Yu Leng Phua, Clinton Van't Land, Jerry Vockley. American Society of Human Genetics (ASHG), October 2019.
11. Enhancement of bioenergetic parameters in very long chain acyl-CoA dehydrogenase deficient cells treated with trimetazidine. Al-Walid Mohsen, **Anuradha Karunanidhi,** Yu Leng Phua, Clinton Van’t Land, and Jerry Vockley. American Society of Human Genetics (ASHG), October 2019.
12. Effect of Trimetazidine on Mitochondrial Bioenergetics in Very Long Chain Acyl-CoA Dehydrogenase deficient cells. Al-Walid Mohsen, **Anuradha Karunanidhi**, Yu Leng Phua, Jerry Vockley. Society for Inherited Metabolic Disorders (SIMD) meeting 2019.
13. IVD Deficient Fibroblasts Show Improvement in Phenotype With Epigallocatechin Gallate Treatment.Olivia D’Annibale, **Anuradha Karunanidhi**, Jerry Vockley, Al-Walid Mohsen. Society for Inherited Metabolic Disorders (SIMD) meeting 2019.
14. VLCAD Deficient Patient Fibroblasts Show Improvement with Transcription Activator Drug. Olivia D’Annibale, **Anuradha Karunanidhi**, Colin O’Carroll, Jerry Vockley, and Al-Walid Mohsen. Society for Inherited Metabolic Disorders (SIMD) meeting 2019.
15. VLCAD Deficient Patient Fibroblasts Show Improvement with Transcription Activator Drug. Olivia D’Annibale, **Anuradha Karunanidhi**, Colin O’Carroll, Jerry Vockley, and Al-Walid Mohsen. Society for the Study of Inborn Errors of Metabolism (**SSIEM**) meeting, 2019.
16. VLCAD deficient patient fibroblasts show improvement with peroxisome proliferator activated receptor drug treatment. Olivia D’Annibale, **Anuradha Karunanidhi**, Colin O’Carroll, Jerry Vockley, and Al-Walid Mohsen. TheInternational Network for Fatty Acid Oxidation Research and Management (INFORM), 2019.
17. Mitochondrial dysfunction associated with *TANGO2* mutation. Paige Heiman, **Anuradha Karunanidhi**, Keaton Solo, Jerry Vockley, Al-Walid Mohsen, Lina Ghaloul-Gonzalez. 2nd Annual Pitt Genetics Retreat, August 2019.
18. Evaluation of mitochondrial dynamics, superoxide production and apoptosis in ETHE1- and sulfite oxidase-deficient fibroblasts. Guilhian Leipnitz, Mateus Grings, Bianca Seminotti, **Anuradha Karunanidhi**, Peter Wipf, Johan Palmfeldt, Al-Walid Mohsen, and Jerry Vockley. Society for Inherited Metabolic Disorders (SIMD) meeting, March 2018, Paradise Point, San Diego, CA.
19. Mitochondrial targeted ROS scavengers improve mitochondrial function in very long-chain acyl-CoA dehydrogenase deficient fibroblasts.Bianca Seminotti, Al-Walid Mohsen, Guilhian Leipnitz, **Anuradha Karunanidhi**, Catherine Kochersperger, Peter Wipf, and Jerry Vockley. Society for Inherited Metabolic Disorders (SIMD) meeting, March 2018, Paradise Point, San Diego, CA.
20. Novel drug therapies of fatty acid -oxidation disorders: The future focus and hope. **Al-Walid** Mohsen, **Anuradha Karunanidhi**, Bianca Seminotti, Guilhian Leipnitz, Catherine Kochersperger, Mateus Grings, Lina Ghaloul-Gonzalez, Areeg El-Gharbawy, Peter Wipf, and Jerry Vockley. Society for Inherited Metabolic Disorders (**SIMD**) meeting, March 2018, Paradise Point, San Diego, CA.
21. Inhibitor-induced *in situ*-chaperone therapy: A novel strategy for treating MCAD and VLCAD deficiencies. Al-Walid Mohsen, **Anuradha Karunanidhi,** Bianca Seminotti, Catherine Kochersperger, Guilhian Leipnitz, Mike Bennet, Jerry Vockley. Flavins and Flavoproteins 19th International Symposium, July 2017, Groningen, Netherlands.
22. Inhibiting Long-Chain 3-Ketoacyl-CoA Thiolase: A Novel Strategy for Treating Fatty Acids Oxidation Disorders. Al-Walid Mohsen**, Anuradha Karunanidhi**, Bianca Seminotti, Guilhian Leipnitz, Catherine Kochersperger, Lina Ghaloul-Gonzalez, Shrabani Basu, Mike Bennet, Jerry Vockley. TheInternational Network for Fatty Acid Oxidation Research and Management (INFORM), Sept 2017, Rio de Janeiro, Brazil.
23. Endoplasmic reticulum-mitochondria crosstalk and redox homeostasis disruption in very long-chain acyl-CoA dehydrogenase deficient fibroblasts. Bianca Seminotti, Al-Walid Mohsen, Guilhian Leipnitz, **Anuradha Karunanidhi**, Peter Wipf, Jerry Vockley. TheInternational Network for Fatty Acid Oxidation Research and Management (INFORM) meeting, Sept 2017, Rio de Janeiro, Brazil.
24. A mitochondrial targeted antioxidant and a cardiolipin binding peptide decrease superoxide generation and improve mitochondrial respiration in ACAD9-deficient fibroblasts.Guilhian Leipnitz, Bianca Seminotti, Al-Walid Mohsen, **Anuradha Karunanidhi**, Vera Y. Roginskaya, Peter Wipf, Bennett Van Houten, Jerry Vockley. TheInternational Network for Fatty Acid Oxidation Research and Management (INFORM) meeting, Sept 2017, Rio de Janeiro, Brazil.
25. Inhibitor-Induced *in situ*-Chaperone Therapy: A Novel Drug Targeting Strategy for Treating Metabolic Disorders.Al-Walid Mohsen, **Anuradha Karunanidhi**, Bianca Seminotti, Guilhian Leipnitz, Catherine Kochersperger, Lina Ghaloul-Gonzalez, Shrabani Basu, Jerry Vockley. International Congress of Inborn Errors of Metabolism (ICIEM) meeting, Sept 2017, Rio de Janeiro, Brazil.
26. Elevated superoxide levels, mitochondrial dysfunction, and endoplasmic reticulum-mitochondria crosstalk disruption in ETHE1- and sulfite oxidase-deficient fibroblasts. Guilhian Leipnitz, Bianca Seminotti, **Anuradha Karunanidhi,** Al-Walid Mohsen, Johan Palmfeldt, and Jerry Vockley. International Congress of Inborn Errors of Metabolism (ICIEM) meeting, Sept 2017, Rio de Janeiro, Brazil.
27. Mitochondrial-targeted compounds improve mitochondrial bioenergetics disturbance in very long-chain acyl-CoA dehydrogenase deficient fibroblasts. Bianca Seminotti, Al-Walid Mohsen, Guilhian Leipnitz, **Anuradha Karunanidhi**, Vera Y. Roginskaya, Bennett Van Houten, Peter Wipf, Jerry Vockley, International Congress of Inborn Errors of Metabolism (ICIEM) meeting, 2017, Rio de Janeiro, Brazil.
28. The Biochemical Basis for Overlap of Clinical Features of LCHAD/TFP Deficiency with Mitochondrial Respiratory Chain Defects: Implications for New Therapeutic Approahes.Areeg El-Gharbawy, Bianca Seminotti, Genevieve Sparagna, Grant Hatch, Shrabani Basu, **Anuradha Karunanidhi**, Al-Walid Mohsen, Jerry Vockley, and Yudong Wang. International Congress of Inborn Errors of Metabolism (**ICIEM**) meeting, Sept 2017, Rio de Janeiro, Brazil.
29. Developing a Tissue-Specific ACAD9 Deficient Mouse Model Using Cre-lox Recombination. Andrew Sinsheimer, Lina Ghaloul-Gonzalez, Areeg El-Gharbawy, Al-Walid Mohsen, **Anuradha Karunanidhi**, Eric Goetzman, Robert Nicholls, Yijen Wu, and Jerry Vockley. International Congress of Inborn Errors of Metabolism (ICIEM) meeting, Sept 2017, Rio de Janeiro, Brazil.
30. Reticular Dysgenesis and Mitochondriopathy Induced by Adenylate Kinase 2 Deficiency Identified in The Amish Population. Lina Ghaloul-Gonzalez, Al-Walid Mohsen, **Anuradha Karunanidhi**, Bianca Seminotti, Mark Vander Lugt, Allison Chirigos, M. Michael Barmada, Cate Walsh Vockley, Miguel Reyes-Múgica, Jerry Vockley. International Congress of Inborn Errors of Metabolism (ICIEM) meeting, Sept 2017, Rio de Janeiro, Brazil.
31. A Novel Drug Therapy Strategy for Treating Fatty Acid -Oxidation Disorders. Al-Walid Mohsen, **Anuradha Karunanidhi**, Bianca Seminotti, Guilhian Leipnitz, Catherine Kochersperger, and Jerry Vockley. National Organization of Rare Disorders (NORD) Summit, October 2017, Washington D.C.
32. Mitochondrial energy metabolism and reactive oxygen species level disruption in ACAD9-deficient fibroblasts. Guilhian Leipnitz, Al-Walid Mohsen, **Anuradha Karunanidhi**,Bianca Seminotti,Vera Y. Roginskaya, Bennett Van Houten, Jerry Vockley. TheInternational Network for Fatty Acid Oxidation Research and Management (INFORM) meeting, Boston, MA 2016.
33. Assessment of mitochondrial bioenergetics in medium-chain and very long-chain fatty acid oxidation deficient fibroblasts. Bianca Seminotti, Al-Walid Mohsen, Guilhian Leipnitz, **Anuradha Karunanidhi**,Vera Y. Roginskaya, Bennett Van Houten, Peter Wipf, Jerry Vockley. International Network for Fatty Acid Oxidation Research and Management (INFORM) meeting, Boston, MA 2016.
34. Mitochondrial bioenergetics disturbance and increased superoxide production in very long-chain acyl-CoA dehydrogenase deficient fibroblasts. Bianca Seminotti, Al-Walid Mohsen, Guilhian Leipnitz, **Anuradha Karunanidhi**,Vera Y. Roginskaya, Bennett Van Houten, Peter Wipf, and Jerry Vockley. Annual Symposium of the Society for the Study of Inborn Errors of Metabolism (SSIEM) meeting, Sept 2016, Rome, Italy.
35. Characterization of the impairment of mitochondrial bioenergetics and dynamics in fibroblasts from patients with complex I deficiency. Guilhian Leipnitz, Al-Walid Mohsen, **Anuradha Karunanidhi**, Bianca Seminotti, Vera Y. Roginskaya, Desiree M. Markantone, Bennett Van Houten, and JerryVockley. Presented at the Annual Symposium of the Society for the Study of Inborn Errors of Metabolism (**SSIEM**) meeting, Sept 2016, Rome, Italy
36. Guilhian Leipnitz, **Anuradha Karunanidhi**, Vera Y. Roginskaya, Bianca Seminotti, Desiree M. Markantone, Al-Walid Mohsen, Bennett Van Houten, Jerry Vockley. “Impairment of mitochondrial bioenergetics in fibroblasts from patients with complex I deficiency”.Society for Inherited Metabolic Disorders (SIMD). 39th Annual Meeting: April 3 - 6, Florida, 2016.
37. Bianca Seminotti, Al-Walid Mohsen, Guilhian Leipnitz, **Anuradha Karunanidhi**, Vera Y. Roginskaya, Bennett Van Houten, Peter Wipf, Jerry Vockley. “Assessment of mitochondrial bioenergetics in medium-chain and very long-chain fatty acid oxidation deficient fibroblasts”.

The International Network for Fatty Acid Oxidation Research and Management (INFORM) Symposium May 2016.

1. Mohsen A-W, Sharma V, Amieva M-V, **Karunanidhi A**, Naylor E, Vockley J. “ Expression of disease causing isovaleryl-CoA dehydrogenase in *Escherichia coli* for characterization and stability studies”. Annual Symposium of the Society for the study of Inborn Errors of metabolism (SSIEM), France, Volume: 38. Suppl. 1. Conference Paper *in* Journal of Inherited Metabolic Disease. September 2015.
2. [K. Bloom](https://www.researchgate.net/researcher/2076868290_K_Bloom), [A-W Mohsen](https://www.researchgate.net/researcher/2076919229_A-W_Mohsen), **A. Karunanidhi**, [D. El Demellawy](https://www.researchgate.net/researcher/38553348_D_El_Demellawy), [M. Reyes-Mugica](https://www.researchgate.net/researcher/14557768_M_Reyes-Mugica), [Y. Wang](https://www.researchgate.net/researcher/2076908803_Y_Wang), [L. Gonzalez](https://www.researchgate.net/researcher/2076849270_L_Gonzalez), [C. Otsuba](https://www.researchgate.net/researcher/2076959090_C_Otsuba), [K. Tobita](https://www.researchgate.net/researcher/2076878168_K_Tobita), [S. Bertera](https://www.researchgate.net/researcher/2076840772_S_Bertera), [C. Hoppel](https://www.researchgate.net/researcher/2076919465_C_Hoppel), [J. Vockley](https://www.researchgate.net/researcher/2076892229_J_Vockley). “Identification and characterization of the biochemical and physiological functions of Acyl-CoA dehydrogenase 10”. 38th Annual Meeting of the Society-for-Inherited-Metabolic-Disorders (SIMD), Volume: 114**.** Conference Paper in Molecular Genetics and Metabolism. February 2015.
3. Catherine Markert, **Anuradha Karunanidhi**, Al-Walid Mohsen, Jerry Vockley**.** “Comparative Analysis of Long Chain Acyl-CoA Dehydrogenases and their Roles in Metabolism”.Children’s Hospital of Pittsburgh Summer Symposium. July 2014.
4. [Manuel Schiff](https://www.researchgate.net/researcher/15498989_Manuel_Schiff), [Birgit Haberberger](https://www.researchgate.net/researcher/53827181_Birgit_Haberberger), [Eric S. Goetzman](https://www.researchgate.net/researcher/11895577_Eric_S_Goetzman), [Radha Uppala](https://www.researchgate.net/researcher/2034498013_Radha_Uppala), [Yuxun Zhang](https://www.researchgate.net/researcher/14623132_Yuxun_Zhang), [**Anuradha Karunanidhi**](https://www.researchgate.net/researcher/2007332947_Anuradha_Karunanidhi), [Dolly Prabhu](https://www.researchgate.net/researcher/2067786455_Dolly_Prabhu), [Hana Alharbi](https://www.researchgate.net/researcher/2067842670_Hana_Alharbi), Al-Walid Mohsen, [Yudong Wang](https://www.researchgate.net/researcher/39855637_Yudong_Wang), [Edward V. Prochownik](https://www.researchgate.net/researcher/40092969_Edward_V_Prochownik), [Robert D. Nicholls](https://www.researchgate.net/researcher/39037484_Robert_D_Nicholls), [Holger Prokisch](https://www.researchgate.net/researcher/38323679_Holger_Prokisch), [Jerry Vockley](https://www.researchgate.net/researcher/39576479_Jerry_Vockley). “Moonlighting in mitochondria: ACAD9 plays a dual role in energy metabolism”**.** Annual Meeting of the Society-for-Inherited-Metabolic-Disorders (SIMD), Volume: 111 Conference Paper *in* Molecular Genetics and Metabolism. February 2014.
5. Kormanik, Kaitlyn; El Demellawy, Dina; Mohsen, Al-Walid; **Karunanidhi, Anuradha**; Reyes-Mugica, Miguel; Vockley, Jerry (2013) "Characterization of an ACAD10 Deficient mouse model: Pathological and Biochemical Analyses". The American Society of Human Genetics Annual Conference (ASHG). 22-26 October 2013.
6. Mohsen A-W, **Karunanidhi A**, Kormanik K, Otsubo C, Vockley J. “Cloning and expression of ACAD10 and ACAD11 proteins in *E. Coli* ”. ICIEM conference 2013: 12th International Congress of Inborn Errors of Metabolism. Barcelona, SPAIN.
7. Kormanik, Kaitlyn; El Demellawy, Dina; Mohsen, Al-Walid; **Karunanidhi, Anuradha**; Reyes-Mugica, Miguel; Vockley, Jerry (2013)"Characterization of an ACAD10 Deficient mouse model: Pathological and Biochemical Analyses". The International Congress of Inborn Errors of Metabolism (ICIEM)/ The Society for Inherited Metabolic Disorders Conference (SIMD) Joint Conference. 5 September 2013.
8. Kaitlyn Kormanik, Dina El Demellawy, Al-Walid Mohsen, **Anuradha Karunanidhi**, Miguel Reyes-Mugica, Jerry Vockley. “Characterization of an ACAD10 deficient mouse model: Biochemical & Pathological Analyses”.Children’s Hospital of Pittsburgh symposium 2013.

# [Manuel Schiff](https://www.researchgate.net/researcher/15498989_Manuel_Schiff), Anuradha Karunanidhi, [Renita Yeasted](https://www.researchgate.net/researcher/2007399445_Renita_Yeasted), [Al-Walid Mohsen](https://www.researchgate.net/researcher/38196303_Al-Walid_Mohsen), [Jerry Vockley](https://www.researchgate.net/researcher/39576479_Jerry_Vockley). “Characterization of 8 patients identified through newborn screening or clinical evaluation as having mild or questionable VLCAD deficiency”. 35th Annual Meeting of the Society-for-Inherited-Metabolic-Disorders, Volume: 105. Conference Paper in Molecular Genetics and Metabolism. February 2012.

# [Manuel Schiff](https://www.researchgate.net/researcher/15498989_Manuel_Schiff), [Anuradha Karunanidhi](https://www.researchgate.net/researcher/2007332947_Anuradha_Karunanidhi), [Renita Yeasted](https://www.researchgate.net/researcher/2007399445_Renita_Yeasted), Al-Walid Mohsen, [Jerry Vockley](https://www.researchgate.net/researcher/39576479_Jerry_Vockley). “How far should we go in the investigation of Very-Long-Chain Acyl-CoA Dehydrogenase Deficiency (VLCADD)?” Article in Journal of Inherited Metabolic Disease 35:S70-S70 · August 2012.

1. [Manuel Schiff](https://www.researchgate.net/researcher/15498989_Manuel_Schiff), [**Anuradha Karunanidhi**](https://www.researchgate.net/researcher/2007332947_Anuradha_Karunanidhi), [Renita Yeasted](https://www.researchgate.net/researcher/2007399445_Renita_Yeasted), Al-Walid Mohsen, [Jerry Vockley](https://www.researchgate.net/researcher/39576479_Jerry_Vockley). “Untangling the dual function of ACAD9”. Annual Science 2012 meeting, University of Pittsburgh, October 1 2012.
2. Pedro Alvarez, Abiraman Srinivasan, Jerald Dumas, **Anuradha Karunanidhi**, Jin Ku Kim, Scott Guelcher and Jeffrey Hollinger. “Osteoclast Cell Proliferation, Differentiation and Resorption on Polyurethane/Bone Composite Implants for Reconstruction of Craniofacial Defects”. Abstract Submitted to Society for Biomaterials conference "April 22-25, 2009".
3. **Anuradha Karunanidhi**, Jinku Kim, Jeffrey Hollinger. “Osteogenic Differentiation of Human Mesenchymal Stem Cell in Response to Exogenous and Released Recombinant Human Bone Morphogenetic Protein 2 (BMP-2) from Polyurethane (PUR) Composites for Treatment of Craniofacial Bone Defects”. Armed Forces Institute of Regenerative Medicine (AFIRM). *AFIRM All hands meeting 14– 16 Jan* 2009*, Tampa, FL*.
4. Anuradha Karunanidhi, Steven Little. **“**Evaluation of PDGF- BB for Osteo-Angiogenic Effects

Using 3D-Speroidial Coculture Model". Biomedical Engineering Society (BMES).

BMES conference *Pittsburgh, 7-12 October* 2009*.*

1. A Srinivasan, DJ Siegwart, SA Bencherif, **A Karunanidhi**, JC Wenke, K Matyjaszewski and JO Hollinger. “Synthesis and characterization of injectable, thermosensitive poly (NIPAAm-co-BMDO)-based gels that set in situ to release osteo-angiogenic growth factors for bone wound healing”. Abstract submitted to Army Science Conference, Orlando, FL, 1- 4 DEC, 2008.
2. **Anuradha.K,** Swaminathan.T and Sai. P. S. T. “Environmental and Health Impacts of synthetic dyes on the Aquatic Environment”**.** Fifth International Symposium and Exhibition on Environmental Contamination in Central and Eastern Europe, Prague, 2000.
3. **Anuradha.K,** Ghosh.S and Sai. P. S. T. “Extractive fermentation of ethanol in an aqueous two-phase system using *Saccharomyces cerevisiae* NCIM3288”. 41st National Conference of Association of Microbiologists of India. 84 p, September 2000**.**