Dear Colleagues and Friends,

Welcome to the inaugural issue of our Divisional Newsletter. We hope the newsletter will serve as a vehicle to keep you connected and apprised of the many exciting activities happening within the Division. As many of you know, the Division was established in 1968 under the leadership of Dr. Darrell Fanestil, and subsequently led for several decades by Dr. Roland Blantz before his retirement in 2013. In this relatively short period of time, the Division has had a proud tradition of excellence in clinical care, investigation, training, and shaping public policy. Over the years, more than 140 fellows have completed training in our program. Among them was Daniel O’Connor, who passed away in 2014. Dan not only completed his residency and fellowship, but also his entire productive academic career within our Division at UCSD. His commitment to patient care and outstanding contributions to science serve as a stark reminder of what our Division strives to achieve, and also that the Division has been established long enough where the entire lifecourse of a successful academic career can happen within it. Thus, above and beyond sharing with you the many exciting activities that are currently ongoing within the Division, I hope this newsletter and subsequent issues might also serve as a vehicle to document our history in real time.

In the Research Spotlight section, you will be introduced to Dr. Prableen (Sheena) Singh. Sheena joined the Division as a Nephrology fellow in 2006. Over the past decade, she has developed unique techniques that have allowed her to make important scientific discoveries in renal physiology, and to transition to independence as an investigator. We also describe new research grants led by several faculty members to give a flavor of the breadth of exciting research activities that are ongoing within the Division.

The Division also continues its tradition and commitment to outstanding clinical care. In this issue of the newsletter, we highlight the Therapeutic Apheresis Program. In the past few years, the program has expended with delivery of new apheresis therapies such as photopheresis and LDL pheresis. The program continues to grow, now providing over 4000 treatments per year.

Finally, the Division also serves as a source of outstanding training to future generations. This year, the Division received a new T32 training grant from the National Institutes of Health, which supports two years of full-time research training for nephrology fellows. Please take a moment to review the robust list of publications from our recent fellows in a wide range of basic, translational, and clinical research topics in Nephrology and Hypertension.

All in all, the Division continues to grow and diversify. I am deeply thankful to all of our faculty, fellows, and our clinical, research, and administrative staff for their efforts every day to help us fulfill our missions of outstanding clinical care for our patients, training of the next generation of nephrology professionals, and advancing science and public policy in nephrology and hypertension.

Best regards,

Joachim H. Ix, MD
Professor and Chief, Division of Nephrology-Hypertension
Dr. Prabhleen Singh joined our Division in 2006 as a nephrology fellow and completed a 2-year postdoctoral research fellowship under the mentorship of Roland Blantz, MD in renal physiology and hemodynamics. Her research focuses on renal hemodynamic and metabolic adaptations in both acute and chronic kidney injury which play an important role in the pathophysiology of disease progression.

Since joining the Division, she has actively investigated significant hemodynamic and metabolic adaptations in rodent models of acute and chronic kidney disease, which were the topic of research during her career development award. She has expertise in physiological techniques to measure in-vivo renal hemodynamics, renal micropuncture to assess glomerular and tubular function at a single nephron and whole kidney level, in-vivo and ex-vivo kidney oxygenation and mitochondrial bioenergetics. Her findings of atypical tubuloglomerular feedback responses and high oxygen consumption in the CKD kidney and the impact of these adaptations on ischemic injury have been published in high impact journals including Journal of American Society of Nephrology, American Journal of Physiology: Renal and Kidney International.

Dr. Singh has had a successful funding record beginning in her fellowship where she was supported by sequential National Kidney Foundation Awards. She then received a 5-year NIH K08 Career Development Award. In addition, she received grant from the NIH funded O’Brien Center for Acute Kidney Injury Research, VA Merit Award, NIH R03 award and American Diabetes Association Research Award. She recently received a competitive score on an R01 application which is likely to be funded in the next several months.

Dr. Singh has attracted significant recognition for her research. She was awarded the Research Recognition Award by the Renal Section of the American Physiological Society in 2011 and again in 2015. She was the recipient of Research Recognition Award from the Epithelial Transport Young Investigator Symposium at the American Society of Nephrology Annual Scientific Meeting in 2013.

She has been active in service at the national level. She served on the Communications Committee for American Physiological Society, and is currently serving on the American Society of Nephrology’s Biosciences Research Advisory Group and Acute Kidney Injury Advisory Group. She has also been recruited as Vice-Chair for the Leadership Committee on the American Heart Association’s Kidney in Cardiovascular Disease Council. She serves as an editorial board member of American Journal of Physiology: Renal and as an early career reviewer for the NIH Pathobiology of Kidney Disease Study Section and the Nephrology Section for the VA Research Review Panel.

At UC San Diego, she serves as a member of the Core Curriculum Committee and Admissions Committee for the School of Medicine. She is also active in mentoring activities with medical students, internal medicine residents and post-doctoral fellows in the lab. She directs the Problem Based Learning curriculum for the first and second year medical students for the renal block. She also participates as faculty for the UAB-UCSD O’Brien Center Rodent Kidney Physiology/Injury Workshop, which is a practical, hands-on course to teach renal hemodynamics and transport on the whole kidney and single nephron level.

Dr. Singh has demonstrated outstanding research progress. She has successfully investigated new areas of research and developed expertise in new research methods by establishing collaborations within and outside UC San Diego. As an outstanding young investigator, trained within the Division, we are proud of her successes. She exemplifies our commitment and vision to train outstanding junior investigators to become innovative, independent scientist who will contribute substantially to new insights to kidney disease throughout their careers.
The Therapeutic Apheresis Program, which is part of the Division of Nephrology - Hypertension, provides apheresis for all departments throughout the UCSD healthcare system, in addition to outside referrals from a large geographic area. The medical directors of Apheresis are Dr. David Ward (who founded the program in 1982) and Dr. Amber Sanchez, both nephrologists. Now performing over 4000 procedures every year, the program has grown to national and international prominence for its clinical excellence and its leadership in apheresis development and education.

The program provides a complete range of therapeutic apheresis modalities. Plasmapheresis (therapeutic plasma exchange) is performed in inpatients and outpatients across the spectrum of indications in neurology, hematology, nephrology, transplant medicine, etc. Photopheresis (ECP) is of growing importance as an effective treatment for graft-versus-host disease, a complication of bone-marrow and hematopoietic-progenitor-cell (HPC) transplantation. ECP is also in routine use for the treatment of lung transplant rejection, and occasionally for cell-mediated rejection of other solid organs. Other major modalities include LDL-apheresis, red-cell exchange apheresis, and cytapheresis for leukemia research.

The primary outpatient apheresis unit at UCSD Hillcrest hospital will move to the La Jolla campus when the multispecialty Outpatient Pavilion opens there in 2017. Already located in La Jolla, in the UCSD Moores Cancer Center, HPC harvest cytapheresis is also part of Nephrology’s Therapeutic Apheresis Program, collecting cells for autologous and allogeneic transplantation for the combined Sharp-UCSD BMT program. Similarly, the Therapeutic Apheresis Program collaborates in numerous pioneering research projects such as white blood cell re-engineering via viral DNA insertion for treatment of leukemia, etc.

UCSD has hosted nurses and physicians from around the world for apheresis training. Now proving very popular is the “Apheresis Physicians’ College at UCSD”, launched in 2015 as a 4-day immersion in apheresis practice for small groups of physicians, repeated at least 4 times per year. The highly successful UCSD “Essentials and Advances in Apheresis Therapies” (EAAT) CME conference is a 2 day event for physicians, nurses and other professionals, with speakers from across the country and abroad. EAAT started in 2013, with the fifth annual conference planned for February 23rd – 25th, 2017.

Websites:
UCSD Therapeutic Apheresis Program - https://health.ucsd.edu/specialties/apheresis/Pages/apheresis-team.aspx

“Essentials and Advances in Therapeutic Apheresis” conference - https://cme.ucsd.edu/apheresis/

Selected publications:


Consistent with its mission to advance basic science discovery and translational medicine in kidney disease, and train future leaders in nephrology, the Division has continued to thrive in research productivity and in generating new funded projects. Below, we highlight some of the recent achievements in grant support by Division faculty, and briefly describe the focus of research supported by each:

“Biomarker Discovery and Validation in Diabetic Nephropathy” Kumar Sharma, MD

This award is funded by the Juvenile Diabetes Research Foundation Network Grant and began in October 2015. The study focuses on marked differences in CKD progression rates in diabetic nephropathy that are not entirely explained by the level of diabetic control, anti-hypertensive control, or albuminuria rates. Moreover, with an expanding armamentarium of drugs to treat diabetic nephropathy, there is an urgent need for biomarkers that can identify individuals who might benefit most from a particular agent, and that can give early indication of treatment response.

This project brings together 4 large diabetic cohorts from across the world and will use metabolomics, lipidomics and proteomics methods to identify and cross-validate novel biomarkers of diabetic kidney disease for this purpose. This grant provides $2.5 million in research support to Dr. Sharma and his team over a 3 year period.

“UAB-UCSD O’Brien Core Center for Acute Kidney Injury Research” Ravindra Mehta, MD (P30DK079337).

Established in 2008, the University of Alabama at Birmingham (UAB) and UCSD O’Brien Core Center for Acute Kidney Injury (AKI) is an interdisciplinary center of excellence for AKI-related research. The overarching goals for the Center are to develop new scientific expertise in the study of basic mechanisms of AKI, encourage interdisciplinary research focused on the causes of AKI, explore new basic areas with translational potential, and generate pilot and feasibility studies that provide new innovative approaches to study kidney disease. The overall Center supports 4 cores, and is headed by Dr. Anupam Agarwal at UAB, and the UCSD center is led by Dr. Ravindra Mehta. The success of the program led to its renewal being funded for an additional 5 years by the NIDDK in 2014.

This project has led many investigators at UCSD to explore pilot and feasibility projects that have led to new funded grants, and provides a unique training resource where investigators from around the world come to UCSD to learn animal physiology methods for the investigation of AKI.

“Adult and Pediatric Nephrology Clinical Investigation Training Program” Joachim Ix, MD (T32DK104717)

Central to the mission of the UCSD Division of Nephrology-Hypertension is training young investigators in research methods and promoting transition to independent careers in research. Over the past decade, the Division has developed considerable expertise in acquisition and training of new faculty with expertise in clinical investigation, and has partnered closely with the UCSD Pediatric Nephrology Division in training several young investigators. Specifically to support training in clinical investigation, Dr. Ix and his colleagues developed a new training program that will provide salary and training support for training in clinical investigation. The award was funded by the NIDDK in April 2016, and will support 3 fellows annually for the next 5 years. The Division also holds a training grant focused on the physiology of salt and water balance, titled “Hypertension” and funded by the NHLBI.

This training grant has been led by Dr. Blantz and has been a major source of training support for our fellows for the past 35 years. The grant was recently submitted for renewal. Dr. Scott Thomson has assumed the role of Program Director, in partnership with Dr. Blantz, on this resubmission of the Hypertension training grant.
Education

The educational programs within the UCSD Division of Nephrology - Hypertension continue to thrive. This year, we had an extremely successful match led by our program director Dr. Cindy Miracle, despite a decreasing pool of applicants nationally and a high percentage of programs that did not successfully match nationwide. The Division filled 4 new fellow positions to join the Division in July 2016, all ranked within the top 10 slots on our match list. We are excited to welcome Drs. Hadi Fattah, Emmanuel Rodriguez Vargas, and Mark Sievert to our 2-year clinical track, and Dr. Alison Potok to our 3-year research track. Several important structural changes have been made to the fellowship, which are designed to serve the diverse interests of our trainees. Whereas historically, all fellows completed a 3-year combined clinical and research fellowship, four years ago the Division restructured the fellowship to allow applicants most interested in clinical excellence and education to pursue a 2-year clinical track, while maintaining the traditional 3-year fellowship for applicants with a desire to have a meaningful in-depth exposure to clinical or laboratory investigation above and beyond their clinical exposure. This year, the Division submitted a new T32 training grant to the NIH focused on clinical investigation. The grant was favorably reviewed by the NIH study section and recently funded. This new training grant supplements another training grant led by Dr. Blantz for the past 35 years, and ensures ongoing support for research fellows for at least the next 5 years. Both the clinical and research fellows continue the Division’s strong history of discovery, presentation at national meetings, and publication.

Fellowship Scholarly Activity

Current Fellows

Alexander Bullen, MD (Mentors: Dena Rifkin, MD and Prabhleen (Sheena) Singh, MD)
Dr. Bullen and Dr. Rifkin entered the ASN teaching innovations contest and they are in the finals! Dr. Bullen was given $1000 to develop a “Choose-your-own-adventure” style teaching tool for teaching about the social and cultural determinants of blood pressure. Dr. Bullen will spend his two year dedicated research time learning about renal physiology investigation in Dr. Singh’s lab.

Charles Ginsberg, MD (Mentor: Joachim Ix, MD)

Christie Izutsu, MD (Mentor: Dinna Cruz, MD)
“Polymyxin B Hemoperfusion and Renal Outcomes in Sepsis”
Poster presentation at ASN Kidney Week, San Diego, CA
Oral presentation at Regional Young Investigators Forum, San Diego, CA January 2016
Oral presentation at NKF Young Investigators Forum, Boston, MA April 2016

“Achievement of Prescribed Ultrafiltration and Clearance Goals and Incidence of Intradialytic Hypotension among Hospitalized Patients”
Oral and poster presentation at AKI & CRRT Conference, San Diego, CA March 2015
Abstract at ASN Kidney Week, Philadelphia, PA November 2014

Anh Nguyen, MD (Mentor: Dena Rifkin, MD)

Aleksandra Novikov, MD (Mentor: Vallon Volker, MD)

Umut Selamet, MD (Mentor: Joachim Ix, MD)
Alumni Publications

Training Program Alumni

2012 - 2015

**Tomasz Beben, MD** (Mentor: Dena Rifkin, MD)


**Beben T, Rifkin DE.** The Elderly are Different: Initiating Dialysis in Frail Geriatric Patients. *Semin Dial.* 2015; 28:221-3. PMID: 25366524

**Dean Nourbakhsh, DO** (Mentor: Prabhleen Singh, MD)


**Emmett Ratigan, MD** (Mentor: Dianne McKay, MD)


**Leonard Goldstein, MD**


**Natalie Sweiss, MD** (Mentor: Kumar Sharma, MD)


2010 - 2013

**Bethany Karl, DO** (Mentor: Kumar Sharma, MD)


**Joseph Abdelmalek, MD** (Mentor: Dena Rifkin, MD)

Alumni Publications cont’d


Julie Dominguez, MD (Mentor: Joachim Ix, MD)


2009 - 2012

Caitlin Carter, MD (Mentor: Joachim Ix, MD)


Jason Davis, MD (Mentor: Daniel O’Connor, MD)

Alumni Publications cont’d


**Samir Nangia, MD (Mentor: Robert Parmer, MD)**

**Meenakshi Verma, MD (Mentor: David Perkins, MD)**


**Sarah Lee, MD (Mentor: Robyn Cunard, MD)**


**2008 - 2011**

**Ali Kashkouli, MD (Mentor: Scott Thomson, MD)**

**Ana Mathew, MD (Mentor: Kumar Sharma, MD)**


Dr. Izutsu will be practicing in Honolulu, HI. Dr. Dean will continue his active duty career with the US Navy in Portsmouth, VA. Dr. Selamet will be joining MD Anderson Cancer Center in Texas for a Onco—Nephrology Fellowship.

Dr. Elahimehr has joined the IVFCMG practice and will also provide care to transplant patients at UCSD.

We enjoyed celebrating our 2016 graduates on successfully completing their Nephrology - Hypertension Fellowship training and Transplant Nephrology Fellowship.
Meet our Fellows

1st Year Fellows

Hadi Fattah, MD
Residency: University of Maryland
Medical School: Kimmel Medical College at Thomas Jefferson University

Alison Potok, MD
Residency: Pennsylvania Hospital
Medical School: Université de Strasbourg Faculté Medécine

Emmanuel Rodriguez, MD
Residency: Texas Tech University Health Sciences Center
Medical School: Texas Tech University Health Sciences Ctr.

Mark Sievert, MD
Residency: University of Utah
Medical School: University of Nevada SOM

2nd Year Fellows

Alexander Bullen, MD
Residency: University of Texas Health Science
Medical School: Universidad de Panamá Facultad de Medicina

Charles Ginsberg, MD
Residency: Washington University SOM
Medical School: Washington University - St Louis SOM

Janice Park, MD
Residency: UC Davis
Medical School: St Louis University SOM

Karo Torosian, DO
Residency: Scripps Mercy Hospital
Medical School: Western University of Health Sciences

3rd Year Fellows

Anh Nguyen, MD
Medical School: UCLA David Geffen SOM
Residency: UC Irvine

Sasha Novikov, MD
Medical School: University of Cincinnati College of Medicine
Residency: UC San Diego

Transplant Fellow

Rodrigo Caero Romero, MD
Residency: Jackson Memorial Hospital
Nephrology Fellowship: Thomas Jefferson Hospital
Medical School: Universidad Mayor de San Simon, Bolivia
The UC San Diego School of Medicine, Division of Nephrology and Hypertension, will be hosting the 35th Annual Advanced Nephrology: Nephrology for the Consultant conference in January 2017 in San Diego, California. This conference is designed with the practicing nephrologist in mind and should prove valuable in the day to day practices of nephrology.

The 14th Annual Nephrology Young Investigators Forum will also be held in January and will feature research presentations by nephrology fellows training in the Western United States. We encourage attendees of the main Nephrology conference to attend this free, bonus session and get a glimpse into the research of these energetic future nephrologists. No credit is available for this event.

We are look forward to having faculty of UC San Diego nephrologists and nationally recognized experts present a wide range of topics which will include:

- Case-based Update on Glomerulonephritis
- Prevention and Management of Acute Kidney Injury
- Peritoneal Dialysis
- Important Considerations in the Management of Hemodialysis Patients with ESRD
- Use of Smart Phones and Web-Based Tools to Improve Patient Care
- Current Consideration in Immunosuppression for Kidney Transplant Recipients
- Review of Current Medical Literature

The 5th Annual UC San Diego Essentials and Advances in Apheresis will build on the great success of the first four conferences. The 2½-day multidisciplinary program is designed to appeal to first time attendees and to returning participants. Expert reviews of the essentials will be augmented with selected new topics and discussions of advances and innovations.

- Nationally and internationally recognized leaders will present didactic sessions and conduct interactive discussions.
- Fundamentals will include in-depth reviews of basic principles, procedures, prescribing, clinical management, care of special populations, etc.
- Updates on selected disease indications will be supplemented by case studies and new clinical science.
- Symposia will review plasma exchange, cell apheresis modalities, technology innovations, billing practices, program management, etc.
- The popular concurrent sessions on Frontiers in Apheresis Science and Expertise in Apheresis Practice will continue, with new topics sessions.
- Breakfast with the Experts, each session focusing on a different area of interest, will provide opportunities to pursue specific questions and detailed discussions.

Attendees will be offered hands-on workshops, led by experienced practitioners, with small-group demonstrations of various techniques and machines used in therapeutic apheresis.
Vision Statement:

**Patient Care:**
To be recognized as an international center of excellence in nephrology, hypertension, and kidney transplantation clinical care.

**Research:**
Through collaboration and innovation, to advance basic scientific discovery and translational medicine, resulting in the delivery of cutting-edge treatment for our patients and for others around the world.

**Education:**
To train future national and international leaders in nephrology through providing outstanding, comprehensive training in all aspects of Nephrology, Hypertension, and Transplantation.

**Public Policy:**
To develop regional, national, and international leaders in shaping public policy to advance health, professionalism, and investigative policy in nephrology and hypertension.

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