SNIPs
An Official Newsletter from the
Society on NeuroImmune Pharmacology

Mission Statement

The mission of the SNIP is to promote research in the pharmacology and immunology of the neuroimmune system; foster exchange of information and ideas on this subject through the organization of regular scientific meetings; to increase understanding of the etiology, prevention, and treatment of neuroimmune disorders; to define the neuroimmunomodulatory properties of endogenous substances such as hormones and cytokines and exogenous agents such as drugs of abuse; to promote understanding of the role played by infectious diseases such as AIDS in disorders of the neuroimmune system; to encourage financial support from funding agencies and industry for research into the pharmacology of the neuroimmune axis; and to serve as a source of reliable information on the pharmacology, immunology, and neuroscience of the neuroimmune system.

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Report from President Guy A. Cabral on the Clearwater Beach Meeting

The SNIP 17th Scientific Conference
Hilton Clearwater Beach Resort, Clearwater, Florida
April 6 – 10, 2011

The 17th Annual Conference of the Society was held in Clearwater Beach, FLA. The Society owes a sincere "thank you" to Sulie L. Chang and Guy A. Cabral as co-Chairs of our Meetings Committee, and to the many other Society officers, members and volunteers who worked on making this conference a success. The Conference maintained a focus on drugs of abuse in modulating neuroimmune processes and on HIV infection. With 198 registered participants, the meeting in Clearwater ranked as one of our best-attended conferences.

A major objective of the conference was to support young investigators. Fifteen full travel awards were presented by the Young Investigator Travel Award (YITA) Committee to nine graduate students (7 female and 2 male) and six post-doctoral fellows (6 male). In addition, three registration waivers were awarded to applications found to be of scientific distinction (3 post-doctoral - 1 female and 2 male). In total, YITA awardees for the 2011 SNIP meeting were 44.4% female and 55.6% male, as well as ~11% minority (African American; Hispanic American; Pacific Islander). In addition, full travel awards were granted to two international trainees from Hong Kong and Taiwan (1 female, 1 male), both of whom were post-doctoral trainees. A generous donation from Dr. Sulie L. Chang and the Institute of NeuroImmune Pharmacology (INIP) at Seton Hall University funded three of the pre-doctoral awards and one of the international awards.

A "highlight" event was the Young Investigator Poster Session. The travel awardees were recognized by a Travel Award Winner ribbon rosette placed by the respective poster. They were joined by trainees who had not applied for a travel award, for a total number of 61 competitors in the Young Investigator Poster Competition (36 female and 25 male competitors; approximately 21% minority). Each of the posters was judged by two senior SNIP members (8 YITA committee members and 10 volunteers). The best post-doctoral and pre-doctoral poster presenters as determined by highest ranking following the poster competition each received the Arthur Falek Young Investigator Award at the Banquet and Awards Dinner. The award included an Award Certificate, a $250.00 cash prize, and a textbook donated by Springer Publishing. The 2011 recipient of the Falek Award for best post-doctoral presenter was Dr. Ibolya-Edit Andras (Dr. Michal Toborek; University of Kentucky) and the Falek Award recipient for best pre-doctoral poster presenter was Ms. Sharron Manuel (Dr. Pooja Jain; Drexel University); both of whom are promising female scientists.

Following the Young Investigator poster competition, the YITA Committee hosted the SNIP Meet-the-Mentors Dinner on Wednesday April 6, 2011: attendees included 57 trainees and approximately 30

mentors. A generous donation made by Dr. Brian Wigdahl and the Institute for Molecular Medicine and Infectious Disease at the Drexel University College of Medicine partially offset the cost of the dinner. Introductory remarks were given by Dr. Abe Bautista (NIH/NIAAA) and Dr. Jag Khalsa (NIH/NIDA). The dinner was designed to encourage interaction among pre-doctoral and post-doctoral trainees and senior individuals from academia, industry, and the NIH; and in that regard it was highly successful.

To further promote the professional development of Young Investigators, a Young Investigator Symposium, which showcased the research accomplishments of the best SNIP trainees, was held on the afternoon of Friday April 8, 2011. Presenters included the top three ranked post-doctoral applicants and the top three ranked pre-doctoral applicants in the Young Investigator Travel Award competition. The post-doctoral presenters were: Dr. Ming Duan (Dr. Shilpa Buch; University of Nebraska Medical Center), Dr. Lei Chen (Dr. Michal Toborek; University of Kentucky), and Dr. Shinsuke Nakagawa (Dr. Michal Toborek; University of Kentucky). The graduate student presenters were: Ms. Crystal Bethel-Brown (Dr. Shilpa Buch; University of Nebraska Medical Center), Ms. Sharron Manuel (Dr. Pooja Jain; Drexel University), and Mr. Ankit Shah (Dr. Anil Kumar; University of Missouri-Kansa City). Dr. Sylvia Kiertscher, the chair of the YITA committee (David Geffen School of Medicine at UCLA), and Dr. Albert Avila (Division of Basic Neuroscience and Behavioral Research/NIDA) co-chaired the Young Investigator Symposium.

Dr. Yuri Persidsky was recipient of the Wybran Award for fundamental contributions in the field of Immunopharmacology. Dr. Howard E. Gendelman received the Herman Friedman Founder's Award for founding the JNIP, for his contributions to SNIP, and for his dedication to SNIP's continued development. Dr. Gayle C. Baldwin was the recipient of the Distinguished Service Award because of her exemplary contributions to the Society for many years, and Dr. David Shurtleff at NIDA/NIH was presented with the Outstanding Service and Support Award for his work in promoting the Society and its meetings.

In addition to a General Poster Session, two Plenary Lectures (*"Receptor Engineering in the Treatment of Pain – Our Search for the Ideal Analgesic"* and *"Alcohol, Immunosuppression, and HIV"*) were presented by Dr. Horace H. Loh and Dr. Steve Nelson, respectively. The President's Symposium focused on *"Neuroimmune Interactions – The New Frontier for Drugs of Abuse and their Endogenous Ligands"*. In an introductory talk, Dr. Toby Eisenstein highlighted new developments in understanding fundamental inter-connections of the neuro-immune axis. The "Symposium Lecture" was given by Kevin Tracey, the Director of the Feinstein Institute, and described how the cholinergic system exerts anti-inflammatory effects on the immune system. Other talks focused on chemokines in the neural system and cannabinoid effects on microglia. Continuing the neuro-immune theme, Drs. Guy Cabral and Sabita Roy chaired a session on "*Modulation of the Peripheral Immune System by Drugs of Abuse and HIV".* Two other symposia addressed current therapeutic approaches to managing neuropsychiatric and neurodegenerative disorders: **"***Management of Neuropsychiatric Complications of Infectious Diseases and Substances of Abuse"* and *"Therapeutic Strategies Targeting Neuroimmune Modulation".* Finally, three symposia addressed the relationship between substance addiction and HIV-1 neurocognitive deficits: "*Cocaine and HIV-1 Interplay: Molecular Mechanisms of Action and Addiction", "HIV-Associated Neurocognitive Disorders (HAND) and Drug Abuse",* and *"The Consequences of Substance Abuse and HIV on Stem Cell Biology"*. An NIH-sponsored workshop was presided over by Drs. David Shurtleff (NIDA), Abraham P. Bautista (NIAAA), and Jeymohan Joseph (NIMH).

Finally, the abstracts of the 17th SNIP Conference were published in the Journal on NeuroImmune Pharmacology (JNIP: Dr. Howard Gendelman, Editor-in-Chief), the official journal of SNIP [J Neuroimmune Pharmacol (2011) 6 (Suppl 1):S4–S59]. In addition, details of the 17th SNIP Conference and a listing of poster presentations are available on the SNIP website www.s-nip.org.

Overall, the research presented in Clearwater was outstanding and engendered active discussions and collaborations between SNIP members and our conference attendees.

Guy A. Cabral, President of SNIP

The SNIP 18th Scientific Conference
Hawaii Prince Hotel - Waikiki, Honolulu, HI
April 24-28, 2012

The 18th Annual Conference of the Society will be held in Honolulu, Hawaii. The Conference will maintain a focus on drugs of abuse in modulating neuroimmune processes and on HIV infection. Again, a major objective of the conference is to support young investigators and the "highlight" event will be the Young Investigator Poster Session that will be followed up by a "Meet the Mentors" luncheon at which young investigators will interact with senior investigators from academia, the National Institutes of Health, and industry to discuss career opportunities. Also, a special Young Investigator Symposium will be convened. Abstracts for travel awards for the 18th Annual Meeting of the Society on Neuroimmune Pharmacology were due December 2, 2011. General abstracts (i.e., other than those for travel awards) were due by January 15, 2012. Abstracts of the 18th Annual Meeting of the Society on Neuroimmune Pharmacology will be published in a special issue of the Journal of Neuroimmune Pharmacology.

In addition to the Young Investigator Poster Session, a General Poster Session will be held. To highlight the emphasis that SNIP places on presenting late-breaking and emerging research findings related to substance abuse and its translational relevance to human health, Dr. Jeffrey Samet will present a plenary lecture on *The Impact of Alcohol and Substance Use on the Prevention and Treatment of HIV/AIDS* and Dr. Ming D. Li will present a plenary lecture on *Genetics and Pharmacogenetics of Addiction and Their Implications for Personalized Medicine.* There will be seven major symposia presented at the Conference. While the topics of the included lectures are diverse, the main focus of the conference will be the interaction of substances of abuse, AIDS and neuropathological processes. These will address HIV Latency and HIV Reservoirs in the Post-HAART Era, Alcohol and NeuroAIDS, Rodent Models of Interaction of Substances of Abuse and HIV-associated Neurocognitive Disorders, Neuroimmunity and Neurodegenerative Diseases, A Glogal Perspective on AIDS and Substances of Abuse, the status of NeuroImmune Pharmacology Research in Hawaii, and the Emerging Health Risk of Spice and Bath Salts in the United States.

Information on accommodations and travel are available on the society webpage at www.s-nip.org. At the gateway to Waikiki, the Hawaii Prince Hotel Waikiki is the perfect location to host our 18th SNIP Scientific Conference. It is located on the water in the Ala Wai Yacht Harbor and is just a few minutes walk to Waikiki Beach, the Ala Moana Beach Park, and the famous Ala Moana shopping center. Every room this luxury resort

has an ocean view, flat-screen television, island-inspired fabrics and weaves, and a specially designed décor with new carpeting and artwork. Free internet access is available in each room. In addition, discount rates for the 27-hole Hawaii Prince Golf Club are available.

Transportation to and from Honolulu International airport (HNL) can be by reservation through Ilima Shuttle. One-way fare includes two standard size bags and one carry-on bag (per person). Children 2-years old and under are free. Reservations also can be made with Premier Limousine. Reservations are not required for transportation using Roberts Waikiki Express that stops at each terminal every 20 minutes. As always, taxi service is available, but at an increased cost. Details about hotel services, transportation cost rates, and telephone or e-mail contacts are available on the SNIP webpage.

There are numerous and exciting local activities available as well as opportunities for sightseeing. Honolulu, as the capital city of Hawaii, is a major center for Pacific Rim business activity, while the adjacent Waikiki area provides gorgeous beaches, oceanfront hotels, world-class shopping and award-winning restaurants. Away from the city, Oahu is an island of magnificent panoramas, ringed with white sand beaches and capped by towering volcanic peaks. Some of the island attractions include Waikiki Beach, the Ala Moana Beach Park, the Diamond Head Crater and State Monument, the Hanauma Bay Nature Preserve, Pearl Harbor and the Battleship Arizona Memorial, the Bishop Museum, the Polynesian Cultural Center on the North Shore, the Hawaiian Waters Adventure Park, the Honolulu Zoo, and the Waikiki Aquarium.

There are also ample venues for shopping. These include the Ala Moana Shopping Center, the Victoria Ward Shopping Center, the Royal Hawaiian Shopping Center, the International Marketplace, and the Aloha Tower Marketplace. For information on all Island Events and activities during your stay, access the Hawaii State Visitor Bureau's Calendar of Events. The address for each of the respective websites is available on the SNIP webpage.

So, please register for the 18th SNIP Scientific Conference and make your hotel reservations and travel arrangements as soon as possible. Again, complete information about the Conference, including an outline of the program, registration, submission of abstracts, hotel reservations, and travel to Honolulu is available at: www.s-nip.org.

Looking forward to seeing you in Hawaii!
Aloha!

Guy A. Cabral,

President of SNIP

SNIP Members at "Work"

This is a photo taken at the end of the 100 mile Lobster Century cycling ride in Rockland, Maine. The photo shows my son, Nick, and I at the end of one of the most beautiful rides in the country. The route goes along the coast line, through fishing communities, inland up Patrick, Frye, and Philbrick mountains, and back to the seashore. The ride features a free lobster roll for those who complete the full 100 miles. The picture was taken after the ride, but before the lobster roll.

Thomas J. Rogers, PhD, Professor and Director
Center for Inflammation, Translational and Clinical Lung Research
Temple University School of Medicine

Can you recognize this scientist in the traditional dance costume? This is a 'mudra' (stance) from the famous Indian dance style of Kuchipudi. The charm of the Indian classical style of Kuchipudi lies in its fast and intricate footwork, sinuous grace, and the use of the eyes to express moods and feelings. This ancient performing art form from India combines fast rhythms with fluid movements, creating a blend of control and abandon, strength and delicacy.

It's **Dr. Anuja Ghorpade**, PhD, Professor and Chair, Department of Cell Biology and Anatomy at the University of North Texas Health Science Center. With six years of training in this art form, when Anuja was once asked "Do you ever not think of science?", and her answer was "Yes, while I am performing Kuchipudi". As a complete mind-and-body routine, it gives tangible meaning to the phrase, "there is more to life than just work".

Submission of a competitive renewal R13 application for the SNIP Conference Grant Award

As the Principal Investigator and Co-investigator, respectively, Sulie L. Chang, Ph.D., the Chair of the Society on Neuroimmune Pharmacology (SNIP) Meetings Committee, and Guy Cabral, Ph.D., the President of the SNIP, have submitted a competitive renewal R13 application for the SNIP Conference Grant Award in September, 2011. Their R13 application received an outstanding overall impact score of 20 at the Study Section Meeting in November 2011.

NIAAA and NIDA Program Announcements

Dr. Abe Bautista, Director of the Office of Extramural Activities, NIAAA announces that several Funding Opportunities Announcements (FOA) were issued or co-issued by NIAAA. These include RFAs, PARs and PAs. For the individual announcement and details of the FOA, please click the following URL links:

http://grants1.nih.gov/grants/guide/search_results.htm?text_curr=niaaa&scope=rfa&year=active&sort=rel&text_prev=&Search.x=26&Search.y=4 and

http://www.grants.nih.gov/grants/guide/search_guide_results.htm?Text_Curr=&PrimaryIC=NIAAA&ParticipatingIC=&Status=Active&DocType=PA&List

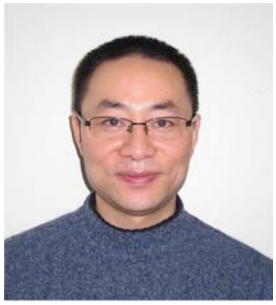
NIAAA issued a new RFA AA 12 009 on Interventions to Improve HIV/AIDS and Alcohol-Related Outcomes (U01). For details, please click this link: http://grants.nih.gov/grants/guide/rfa-files/RFA-AA-12-009.html. The letters of intent are due on February 25, 2012 and should be sent by email to Dr. Bautista (Abraham.Bautista@nih.gov), OEA Director, NIAAA/NIH. The applications are due on March 26, 2012.

Dr. Diane Lawrence, AIDS Research Program, OD, NIDA, suggests the following links for active funding opportunity details from NIDA:

A link to the NIDA funding page http://www.drugabuse.gov/funding/funding-opportunities (both AIDS and non-AIDS opportunities, and a link to the international program) as well as the AIDS website http://www.drugabuse.gov/AIDS

Early-Career Investigator Perspectives

In this newsletter we would like to highlight three early-career investigators (ECI) whose exemplary contributions during the last year caught the attention of the NeuroImmune Pharmacology field. Included here are perspectives written by fellow investigators on exciting publications by these ECI.



Lei Chen, MD, PhD
Postdoctoral Fellow, Neuroscience Department, Mount Sinai School of Medicine

Lei Chen received his MD from Henan Medical University, China in 1997 and his PhD from the University of Occupational and Environmental Health, Kitakyushu, Japan in 2006. He has since held a position as a postdoctoral fellow at the University of Kentucky, Lexington, KY researching Neuroscience and Cerebral Vascular Diseases. Currently Lei Chen is a postdoctoral fellow in the Neuroscience Department at the Mount Sinai School of Medicine studying neuroscience, repair, and regeneration of axons and neurons. His hobbies include sports, art, and reading. Lei Chen's wife, Kai Su, is currently a postdoctoral researcher in the College of Pharmacy at the University of Kentucky, and his son, Christopher Y Chen, is almost 3 years old, energetic and active.

Perspective on: Chen, L., Choi, J.J., Choi, Y.J., Hennig, B., Toborek, M., **HIV-1 Tat-induced cerebrovascular toxicity is enhanced in mice with amyloid deposits**. Neurobiology of Aging. 2011. doi: 10.1016/j.neurobiolaging.2011.06.004.

The success of combined antiretroviral therapy (cART) has dramatically increased longevity for those infected with HIV. Recent statistics from the CDC (HIV Surveillance Report, 2009) indicate that the 2008 HIV prevalence in US adults over 50 was about 30%, with AIDS prevalence in that same population passing 35%. Further, older Americans accounted for 1 in 6 new HIV diagnoses and nearly 1 in 4 new AIDS diagnoses. Even outside the setting of HIV infection, aging can be a risk for decline in overall mental health and cognitive function. This situation creates new challenges for healthcare as well as providing the impetus to expand on our understanding of the influence of HIV on the biology of aging. In 2011, Neurobiology of Aging published a study by Lei Chen, PhD, et al., a young investigator from the Department of Neurosurgery, University of Kentucky that examined the toxicity of HIV-1 Tat in combination with amyloid beta (Ab) in the vasculature of the brain. Dr. Chen reported that Tat exposure via the carotid artery produced similar blood-brain barrier disruption in both young and aged mice. This disruption was enhanced by Ab deposits in the brains of older transgenic mice. Tat treatment resulted in the decreased expression of tight junction proteins, regardless of the age or Ab status, and induced MMP-9 expression in aged mice. In vivo visualization of brain blood vessels via a cranial window showed a rapid aggregation of rhodamine-labeled leukocytes in response to Tat that is consistent with the expected activity of MMP-9 and the changes in tight junction proteins. Most, but not all, of these effects were reversed when mice were pre-treated with an inhibitor of the Rho signaling pathway. Finally, the sufficiency of Ab to enhance these effects of Tat was shown in vitro.

While simplified to include only Tat, these experiments provide further evidence of a compelling interaction between HIV and increased Ab that results from both infection and aging. One can envision multiple ways in which HIV toxins such as Tat might contribute to the development of HIV-associated cognitive disorders. During times of active replication that generate high levels of Tat in plasma, cerebrovascular toxicity will contribute to the migration of infected monocytes into the brain. In contrast, when successful cART keeps virus levels low, the effects of aging, such as accumulation of Ab, might enhance the toxic effects of low levels of Tat on the brain. As medicine and science continue to reduce HIV mortality, the morbidity caused by the overlap between host and virus biology remains a pressing issue to further our understanding.
- **Dr. Richard Noel Jr.**, PhD, Associate Professor, Department of Biochemistry, Ponce School of Medicine

Marilou Andres, PhD
Assistant Research Professor, Pacific Biosciences Research Center, University of Hawaii at Manoa

Marilou Andres received her PhD from the University of Hawaii at Manoa, Honolulu, Hawaii in 1998. Following this, Dr. Andres worked as a postdoctoral researcher at the Pacific Biomedical Research Center, University of Hawaii at Manoa for 1 year. From 2000-2001 she served as an Adjunct Professor at Hawaii Pacific University. From 2002-2005 Marilou worked as a Program Coordinator in the Specialized Neuroscience Research Program at the Pacific Biosciences Research Center, University of Hawaii at Manoa. Since 2005 she has been an Assistant Research Professor at the Pacific Biosciences Research Center.

Perspective on: Andres, M.A.*, et al.* (2011) **APOE epsilon 4 allele and CSF APOE on cognition in HIV-infected subjects.** *J Neuroimmune Pharmacol* 6, 389-398.

Despite the wide spread use of combination anti-retroviral therapy (cART) HIV-associated neurocognitive disorders (HAND) remain a prevalent co-morbid condition in HIV-1 infected patients. Not all, but only a small percentage of infected individuals exhibit these cognitive deficits. Host genetic factors play a substantial role in the development of neurological disorders. A genetic factor like ApoE was shown to influence the disease progression and pathogenesis of Alzheimer's disease (AD) and other neurological disorders. ApoE is a plasma protein involved in lipoprotein metabolism. While the most common allele of ApoE is ε3, out of other two alleles, ε2 and ε4, epidemiological studies demonstrated that the ε4 allele is associated the incidence and progression of the neurological disorders. The association of ε4 allele with AD raised interest in assessing this risk factor in the occurrence of HAND and HIV-1-associated dementia (HAD). In HIV-1-infected patients ε4 allele was shown to be associated with an accelerated rate of HIV-1 disease progression. However, several contradicting results were reported regarding the relationship of ApoE ε4 to the incidence of HAND and HAD. Factors like age, differences in race, and HIV-1 viral strain were thought to be the possible contributors to the discordance. Marilou Andres, an early career investigator, and her colleagues reported for the first time an association of ApoE protein levels in cerebrospinal fluid (CSF) to impaired cognitive function in ε4+ HIV-1+ patients, in the September 2011 issue of Journal of Neuroimmune Pharmacology. Subjects in the study were screened for a battery of neurophysiological tests, including fluency, memory, speed of processing, attention and motor function. Dr. Andres performed detailed regression analyses between CSF ApoE levels in ε4+ and ε4- uninfected and HIV-1-infected subjects and their performance in different neurocognitve tests. Higher CSF ApoE levels lead to poorer performance of ε4+ HIV-1+ patients on HIV dementia scale and on Global cognitive scores. Although the CSF ApoE levels in HIV+ ε4+ patients were similar to non-infected subjects, in the presence of HIV-1-infection, a negative “dose-dependent” effect was shown. In ε4- HIV+ patients, higher CSF ApoE was associated with better performance. Trends of three-way interactions between ε4 allele, CSF ApoE, and HIV-1 status were observed in fluency and speed domains.

Identification of this three-way relationship is a step forward in finding promising CSF diagnostic and predictive markers for HAND. Although, as the authors discussed, finding the relationship to the ApoE4 isoform, instead of total ApoE protein is essential. The cohort studied by Dr. Andres had subjects with ages between 40 and 50, and had three different races. However, the authors did not mention any possible correlation to the origin of subjects from different geographical areas. The cohort also did not have subjects on anti-retroviral treatment. Given that the prevalence of HAND appears to be rising in the cART era, even with efficient control of viral replication in HIV-1-infected persons, genetic factors increasing the risk in these patients of developing HAND need to be evaluated.

- **Dr. Santhi Gorantla, PhD,** Assistant Professor, Pharmacology and Experimental Neuroscience, University of Nebraska Medical Center

Subhas Das, PhD
Visiting Assistant Professor, Department of Pharmacology, Oklahoma State University, Oklahoma

Subhas Das received his PhD from the University of Delhi, India. He then worked with Dr. Sabita Roy at the University of Minnesota for almost four years on morphine-withdrawal induced immune suppression. Dr. Das currently works as a Visiting Assistant Professor in the Department of Pharmacology at Oklahoma State University. His hobbies include playing basketball and ping-pong with his kids. Subhas's wife, Dr. Sapna Das- Bradoo is an Assistant Professor of Biology in the field of eukaryotic DNA replication at Northeastern State University. They have two smart boys, Shwetanshu and Aditya, who make them proud every day.

Perspective on: Subhas Das, Jennifer Kelschenbach, Richard Charboneau, Roderick A. Barke, and Sabita Roy, **Morphine Withdrawal Stress Modulates Lipopolysaccharide induced Interleukin 12 p40 (IL-12p40) Expression by Activating Extracellular Signal-regulated Kinase 1/2, Which Is Further Potentiated by Glucocorticoids**. J. Biol. Chem. 286, 29806–29817

Morphine abusers and patients who take morphine for pain management undergo phases of morphine withdrawal. Morphine withdrawal is known to cause immunosuppression in experimental animals as well as in humans. A few studies also suggest that morphine withdrawal activates the hypothalamic-pituitary-adrenal axis resulting in increased corticosterone levels. This paper, led by an Early Career Investigator, Subhas Das and colleagues, highlights the modulation of IL-12p40 by morphine withdrawal and corticosterone. The study was elegantly performed using WT and μ-opioid receptor knock-out mice, as well as murine primary macrophages in the presence of bacterial endotoxin, lipopolysaccharides (LPS), and morphine withdrawal-induced stress. The study showed that morphine withdrawal inhibits LPS-induced IKK activity and this inhibition causes persistent activation of MEK1/2, leading to hyperactivation of ERK1/2 and suppression of IL-12p40. Furthermore, the study revealed the role of transcription factors, such as NFκB and AP-1 in regulating IL-12 production. The unique role of IL-12p40 in the regulation of IL-12 suggests its critical role in the immunopathogenesis of Th1-mediated inflammatory and autoimmune disorders. Overall, the findings in this paper suggest that morphine withdrawal can disrupt normal immune function and can possibly lead to enhanced susceptibility to infection. In addition to the population who undergo morphine withdrawal because of their use of the drug for pain management, the study is relevant with regard to HIV-1 and neuroAIDs because morphine use in HIV-1-infected individuals is very high, and many of them undergo morphine withdrawal. The findings from this, and subsequent studies, will help in the discovery of novel interventions to reduce/abolish immune suppression upon morphine withdrawal. This study is novel because, although a wealth of information exists on morphine-induced immune suppression, very few studies have investigated the effects of morphine withdrawal and the underlying mechanisms on immune suppression.

- **Dr. Santosh Kumar, PhD**, Assistant Professor, Division of Pharmacology and Toxicology, UMKC School of Pharmacy

Young Investigator Travel Award Winners 2012

In order to promote interest in the field of neuroimmune pharmacology and to recognize the excellent work being done by young investigators in this field, the Society provides Young Investigator Travel Awards (YITA) to trainees working with a SNIP Member and seeking funds to attend the annual conference of the Society on NeuroImmune Pharmacology. For the 2012 SNIP Scientific Conference, travel awards were granted to: **Marisela Agudelo** (Florida International University; M Nair, mentor), **Julie Castaneda** (University of California, Los Angeles; M Roth, mentor), **Prasanta Dash** (University of Nebraska; H Gendelman, mentor), **Donna Davidson** (University of Rochester; S Maggirwar, mentor), **Jerel Adam Fields** (University of North Texas Health Science Center; A Ghorpade, mentor), **Sylvia Fitting** (Virginia Commonwealth University; K Hauser, mentor), **Lisa Henderson** (Rush University Medical Center; L Al-Harthi, mentor), **Joseph Jackson** (University of Rochester; S Maggirwar, mentor), **Mukesh Kumar** (University of Hawaii; V Nerurkar, mentor), **Jana Ninkovic** (University of Minnesota; S Roy, mentor), **Divya Sagar** (Drexel University College of Medicine; P Jain, mentor), and **Dionna Williams** (Albert Einstein College of Medicine; J Berman, mentor). Registration Waivers were awarded to: **Crystal Bethel-Brown** (University of Nebraska; S Buch, mentor), **Gladys Chompre** (Ponce School of Medicine and Health Sciences; R Noel, mentor), **Maureen Richards** (Rush University Medical Center; L Al-Harthi, mentor), **Scott Schachtele** (University of Minnesota; J Lokensgard, mentor), **Ankit Shah** (University of Missouri-Kansas City; A Kumar, mentor), and **Fabian Vazquez-Santiago** (Ponce School of Medicine and Health Sciences; V Rivera Amill, mentor). A special thank you to the National Institutes of Health/National Institute on Drug Abuse for supporting these travel awards through the Society's Conference Award.

NIDA/AAPI also independently supported the following travel awards: **Wenyan Cui** (University of Virginia; M Li, mentor), **Mohitkumar Gangwani** (University of Missouri-Kansas City; A Kumar, mentor), **Bijayesh Haldar** (Temple University; R Potula, mentor), **Mengyao Jin** (University of Missouri-Kansas City; S Kumar, mentor), **Chinmay Mantri** (Meharry Medical College; CV Dash, mentor), **Sraboni Sarkar** (Seton Hall University; SL Chang, mentor), **Moqiang Wang** (University of Nebraska; JL Zheng, mentor), **Lu Yang** (University of Nebraska; S Buch, mentor), **Yu Zhou** (Temple University; WZ Ho, mentor).

Additionally, NIDA/AAPI supported the following registration waiver awards: **Anusha Ande** (University of Missouri-Kansas City; S Kumar, mentor), **Fnu Ashutosh** (University of North Texas Health Science Center; A Ghorpade, mentor), **Natasha Homji** (Seton Hall University; SL Chang, mentor), **Nariko Katayama** (University of Hawaii; L Chang, mentor), **Jing Ma** (University Minnesota; S Roy, mentor), **Sody Munsaka** (University of Hawaii; L Chang, mentor), **Vijaya Pichili** (Florida International University; M Nair, mentor), **Pavan Puligujja** (University of Nebraska; X Liu, mentor), **Naomi Tanizaki** (University of Hawaii; L Chang, mentor), Yizhong **Wang** (Temple University; WZ Ho, mentor), **Yongxiang Wang** (University of Nebraska; JL Zheng, mentor)

Sanjay Maggirwar, SNIP Communications Committee Chair and Michelle Kiebala, Postdoctoral Research Associate, University of Rochester Medical Center, Rochester, NY