



59th Annual Meeting & ToxExpo
Virtual Meeting



2020 Mechanisms Specialty Section Business Meeting and Reception

Thursday, April 29, 2020

12PM-1PM

Webinar

Thank You to 2019-2020 Mechanisms Leadership



Donna D. Zhang*
Past President
University of Arizona



Rhiannon N. Hardwick
President
Theravance Biopharma



Brian J. Day
Vice President
National Jewish Health



Daniel D. Petersen
Vice President-Elect
US EPA-ORD



Jonathan Maher
Secretary-Treasurer
Genentech



James P. Luyendyk*
Senior Councilor
Michigan State University



John Clarke
Junior Councilor
Washington State University



Dahea You*
Postdoctoral Representative
NTP/NIEHS



Emily Marques*
Graduate Student Representative
University of Rhode Island

***Special thanks to outgoing officers!**

Welcome New 2020-2021 Officers!!



Cheryl E. Rockwell
Vice President-Elect
Michigan State University



Kai Wu
Junior Councilor
Genentech



Kathryn Miranda
Postdoctoral
Representative
*University of South
Carolina*



Colin Anderson
Graduate Student
Representative
University of Colorado

Planning for 2021 Begins Now



**2021 Annual Meeting Proposals Must Be Submitted to SOT HQ by:
June 12, 2020
www.toxicology.org/2021**

- Requesting proposals with a mechanistic focus
 - Student & postdoc led sessions are welcomed & encouraged to team up with a senior member for guidance
- Consider Mechanisms SS as your primary endorser
 - Official endorsements made AFTER submission deadline during frontline review
 - Leadership provides recommendations to Scientific Programming Committee as part of frontline review
- Take advantage of the pre-submission review period offered by Mechanisms leadership
 - Receive pre-submission feedback
 - Enhance proposal strength and increase chances of acceptance

Email proposal drafts to sotmechanisms@gmail.com by June 5, 2020 to receive pre-submission feedback



60th Annual Meeting & ToxExpo

March 14–18, 2021 • Orlando, Florida

Contribute to the Continuing Education Program!

Opportunity to connect with and teach attendees in your specialty

Submission deadline is June 12, 2020

\$500 stipend to support each course speaker!

www.toxicology.org/2021



60th Annual Meeting & ToxExpo

March 14–18, 2021 • Orlando, Florida

*\$500 stipend to help
support each speaker!*

Topics of Interest!

- 3D/Organ-on-a-Chip/MPS
- Biologics
- Endocrine
- Exposure Toxicology
- Gene/Cell-Based Therapies
- Green Chemical Development

- Machine Learning and Other Cutting-Edge Tools in Toxicology
- Microbiome
- Nanotoxicology
- QSAR
- Regulatory Guidelines and Practices

Submission Deadline—June 12

- Safety Pharmacology for Industry
- SEND Guide
- Single Cell Approaches
- Tissue Barrier in Toxicology (e.g., BBB)

www.toxicology.org/2021

Mechanisms Operating Budget



Item	Ledger (\$)
Available Funds as of February 2020 <ul style="list-style-type: none">Includes membership fee revenue and individual donations	11,293.00
Award Incidentals <ul style="list-style-type: none">Includes Postdoctoral Student Travel Award stipends, poster printing, & all plaques	-2,623.00
Student/Postdoc Mentoring Event Support <ul style="list-style-type: none">Cancellation fee	-273.00
Contributions	1,000.00
On-Site Business Meeting and Reception <ul style="list-style-type: none">Cancellation FeesAward Shipping	?
Webinar Fees	TBD
Anticipated Balance AFTER Annual Meeting	9,397.00

- Operating budget expenses committed to Annual Meeting activities and administration of awards (e.g., plaques)
- Positive balance maintained each year

Endowment Fund Financials

Quarterly Report (December 2019)	Sheldon D. Murphy Award	Ronald G. Thurman Award	Robert J. Rubin Award	Renal Toxicology Award	Gabriel L. Plaa Award	Carl C. Smith Award
Interest & Dividends	2,248	1,224	1,051	1,848	2,261	2,697
Gain/Loss (\$)	4,277	2,329	1,999	53,526	4,302	5,135
Contributions (\$)	0	0	0	1,275	0	750
Expense (Distributed Awards, \$)	0	0	0	0	0	0
Net Assets (\$)	109,351	59,535	51,103	90,130	109,974	131,517

- 2020 award stipends not yet expensed
- ~4% is made available from funds for award distribution each year
- Visit <https://www.toxicology.org/endowment/> to learn how **YOU** can make an impact



**All student & postdoc
awards are made possible
by Endowment Fund
contributions!!**



2020 Mechanisms Specialty Section Awards Announcements

Award winners, Dahea You will reach out directly after the webinar for submission of photos

Mechanisms Career Achievement Award



- Enacted in 2014 to honor the contributions of an outstanding member to mechanistic toxicology research
- Relies on nominations from Mechanisms members
 - Nomination packets include 2 letters of support and CV of nominee
- Committee weighs the impact of the nominee's work to the field of mechanistic toxicology, commitment to furthering the field, and mentoring activities

2014



Dean P. Jones
Emory University

2015



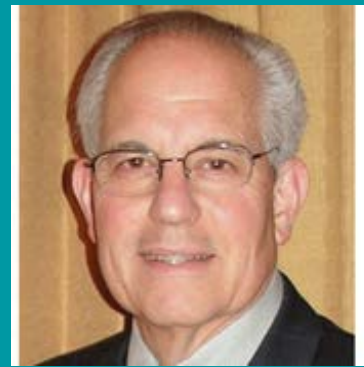
Dennis R. Petersen
University of Colorado

2016



Michael A. Gallo
Rutgers University

2017



Steven D. Cohen
University of Connecticut

2018



Debra Laskin
Rutgers University

2019



Lois Lehman-McKeeman
Bristol-Myers Squibb

2020 Mechanisms Career Achievement Award



**Curtis D. Klaassen,
PhD, DABT, ATS, FAASLD**



- Prolific researcher and educator in toxicology
 - Received PhD in 1968 under tutelage of Gabriel L. Plaa
 - >590 research manuscripts, >100 safety assessments, >100 reviews and book chapters, >500 abstracts
 - Most-cited researcher in pharmacology & toxicology 1997-2007
 - Trained 37 PhD students and 66 postgraduate fellows
 - Editor of Casarett and Doull's Toxicology since 1980
 - Organizer of Mid-America Toxicology Course
- Prominent member & contributor to SOT
 - Former SOT president, member of Education, Membership, Awards, Finance, and Nominating Committees
 - Achievement Award (1976), Educational Award (1993), Merit Award (2012)
- Research interests have included:
 - Hepatobiliary disposition of xenobiotics
 - Hepato- and nephrotoxicity of cadmium
 - Endocrine disruptors and thyroid hormone metabolism
 - Regulation and role of uptake/efflux transporters in disposition
 - Intracellular receptor regulation of metabolism and transport
 - Role of Nrf2 in adaptation to toxicant exposure

Sheldon D. Murphy Student Travel Award



- Established in May 2011, honors the memory of Sheldon D. Murphy
 - Charter member of SOT & 14th President
 - Early advocate for mechanistic toxicology research and the role of biotransformation
 - Endowed award
 - Administrator: Jonathan Maher
- Applicants must submit an abstract and be a PhD candidate at time of application
 - Selections based on scientific quality of abstract
 - ~5-8 recipients
 - ~\$500* award

Sheldon D. Murphy Student Travel Award Recipients!



Group 1 of 2! (in alphabetical order)

Kelsey Behrens, University of North Carolina at Chapel Hill

Novel Mouse Lines with Humanized Glutathione S-Transferase Pi, Mu, and Theta Families Reveal Species Differences in Enzyme Expression and Function In Vivo

PI: Beverly H. Koller

Reena Berman, University of Colorado

Single Cell RNA Sequencing Reveals a Unique Monocyte Population in Bronchoalveolar Lavage Cells of Mice Challenged with Afghanistan Particulate Matter and Allergen

PIs: Hong Wei Chu and Brian J. Day

Itishree Kaushik, Texas Tech University

Moxidectin, a Novel Therapeutic Option for Pediatric Medulloblastoma

PI: Sanjay K. Srivastava

Siennah Miller, University of Arizona

Modeling Blood-Testis Barrier Characteristics with Novel CRISPR/Cas9 Functional ENT1 and ENT2 Knockout HeLa Cell Lines

PI: Nathan J. Cherrington

Sheldon D. Murphy Student Travel Award Recipients!



Group 2 of 2! (in alphabetical order)

Sharavan Ramachandran, Texas Tech University

Pancreatic Tumor Growth Suppression through Induction of Autophagy by a Novel Anti-Parkinson Drug Pimavanserin

PI: Sanjay K. Srivastava

Archit Rastogi, University of Massachusetts at Amherst

Pancreatic Nrf2 Expression and Organ Morphogenesis Is Altered by Modulating Glutathione in the Developing Zebrafish (Danio rerio) Embryo

PI: Alicia R. Timme-Laragy

Monika Roy, University of Massachusetts at Amherst

The Sulfate Metabolite of 3,3'-Dichlorobiphenyl (PCB-11) Impairs Cyp1a Activity and Increases Hepatic Neutral Lipids in Zebrafish Larvae (Danio rerio)

PI: Alicia R. Timme-Laragy

Cody Jozef Schmidlin, University of Arizona

Chronic Arsenic Exposure Increases Metastatic Potential of Lung Cancer Cells via Transcriptional Regulation of SOX9 by NRF2

PI: Donna D. Zhang

Postdoctoral Student Travel Award



- Funded by the Mechanisms SS operating budget
 - Administrator: James Luyendyk
- Applicants must submit an abstract and personal statement + 2 supporting letters
 - Must be sponsored by a Mechanisms member
 - ~2 recipients
 - ~\$500* award

Postdoctoral Student Travel Award Recipients!



Courtney Culpepper, University of South Carolina

Cannabidiol Regulated microRNAs Promote Mast Cell Signaling via Peroxisome Proliferator-Activated Receptor-Gamma to Protect Against Staphylococcal Enterotoxin B-Induced Liver Injury

PI: Mitzi Nagarkatti

Lauren Poole Hardy, Michigan State University

Protease-Activated Receptor-1 Expressed by Hepatic Stellate Cells Drives Coagulation Activation and Fibrosis in Experimental Chronic Liver Injury

PI: James P. Luyendyk

SPECIAL ANNOUNCEMENT: Change to Postdoctoral Student and Sheldon D. Murphy Travel Awards



- Postdoctoral Student Travel Award
 - Historically expensed from the operating budget
 - Reliant upon low Annual Meeting reception costs and membership fees
 - Fund availability at risk each year
- SOT Council approved a new measure: Combine the Postdoctoral Student and Sheldon D. Murphy Student Travel Awards
 - Minimum number of graduate student and postdoc travel award recipients does not change
 - Award target (\$500 each) does not change

EFFECTIVE FOR OCTOBER 2020 ABSTRACT SUBMISSION DEADLINE

	Minimum # Graduate Student Recipients	Minimum # Postdoc Recipients
Prior Sheldon D. Murphy	5	-
Postdoctoral Student	-	2
Updated Sheldon D. Murphy	5	2

Ronald G. Thurman Student Travel Award



- Created in August 2009 by former students of Dr. Thurman
 - Played a significant role in the toxicology graduate program at the University of North Carolina at Chapel Hill
 - Made important contributions in applying mechanistic toxicology to xenobiotic metabolism and hepatophysiology
 - Endowed award
 - Administrator: Rhannon Hardwick
- Applicants must submit a cover letter and abstract
 - Selections based on abstract quality and construction
 - Recipient must be a graduate student member
 - ~2 recipients
 - ~\$500* award

Ronald G. Thurman Student Travel Award Recipients!



Melissa Clemens, University of Arkansas for Medical Sciences

Exogenous Phosphatidic Acid Is a Novel and Widely Available Treatment for Acetaminophen Hepatotoxicity

PI: Mitchell R. McGill

Dan Rizzolo, Rutgers University

Sex Differences in Bile Acid Metabolism

PI: Grace L. Guo

Regina Schnegelberger, University of Pittsburgh

Vinyl Chloride Impacts Mitochondrial Dynamics and ER-Mitochondria Communication in Mice

PI: Juliane I. Beier

Robert J. Rubin Student Travel Award



- Created in July 2008 by former student, Mark Montgomery
 - Honors Dr. Rubin's distinguished career in toxicology and commitment to education
 - Jointly managed by Mechanisms SS and Risk Assessment SS
 - Endowed award
 - Administrator: Brian Day
- Applicants must submit an abstract and cover letter
 - Selections based on abstract quality and application of mechanistic toxicology to risk assessment
 - ~1-2 graduate student recipients
 - ~\$500-750* award

Robert J. Rubin Student Travel Award Recipient!



Alexa Murray, Rutgers University

Farnesoid X Receptor Regulates Macrophage Activation in Nitrogen Mustard-Induced Lung Injury in a Sex-Dependent Manner

PI: Debra Laskin

Renal Toxicology Fellowship Award



- Established in December 2008 to recognize students and postdocs for excellence in mechanistic renal toxicity research
 - Created by donors active in renal toxicology research
 - Fosters continued advancement of renal toxicology field
 - Endowed award
 - Administrator: Dan Petersen
- Applicants must submit an abstract, 300 word narrative, and advisor letter of support
 - 3 recipients: 1st, 2nd, 3rd
 - ~\$250-\$1000* award

Renal Toxicology Fellowship Award Recipients!



1st Place

Joseph Jilek, University of Arizona

Altered Cisplatin Pharmacokinetics during Nonalcoholic Steatohepatitis Contributes to Reduced Nephrotoxicity

PI: Nathan J. Cherrington

2nd Place

Jephte Akakpo, University of Kansas Medical Center

4-Methylpyrazole Protects Against Acetaminophen Induced Nephrotoxicity

PI: Hartmut Jaeschke

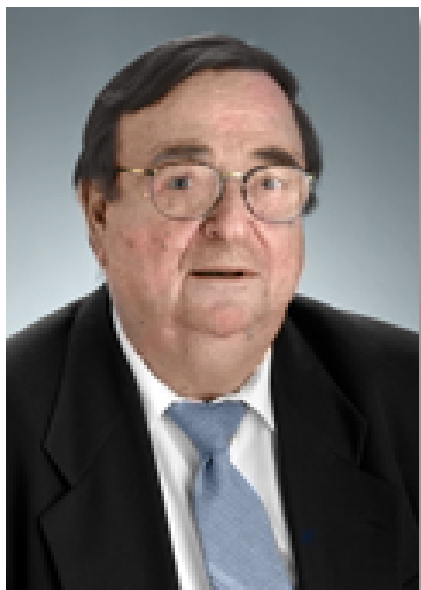
3rd Place

Lillie Allred Barnett, University of Georgia

Acute In Vitro Nephrotoxicity of Three Brominated Flame Retardants in Renal Cells

PI: Brian S. Cummings

Gabriel L. Plaa Education Award



- Established in December 2009 by former student, Dr. Curtis Klaassen to memorialize Dr. Plaa's contributions in toxicology, leadership, mentorship, and friendship
 - Former SOT President and Editor of TAAP
 - Outstanding contributions to mechanistic toxicology and chemical-induced liver injury
 - Tremendous influence in training toxicologists
 - Endowed award
 - Administrator: Donna Zhang
- Applicants must submit a cover letter, abstract, CV, + 2 letters of recommendation
 - Finalists are selected to interview before a committee Sunday preceding the Annual Meeting
 - 3 recipients: 1st, 2nd, 3rd
 - ~\$750-\$1500* award

Gabriel L. Plaa Education Award Recipients!



1st Place

Lauren Poole Hardy, Michigan State University

Protease-Activated Receptor-1 Expressed by Hepatic Stellate Cells Drives Coagulation Activation and Fibrosis in Experimental Chronic Liver Injury

PI: James P. Luyendyk

2nd Place

Souvarish Sarkar, Harvard Medical School

Multiplex analysis in a Drosophila gene-environment model identifies interactions among LRRK2, rotenone and α -synuclein

PI: Mel Feany

3rd Place

Avinash Kumar, University of Pittsburgh

High-fat diet unmasks tumorigenic potential of transient vinyl chloride exposure at sub-OSHA level concentrations

PI: Juliane I. Beier

Carl C. Smith Student Mechanisms Award



- Established in March 1983 to honor the life and work of Carl C. Smith
 - Oldest award offered by Mechanisms SS
 - Created through the leadership of Dr. Smith and his wife, Thelma (Tee)
 - Encourages students to conduct research on mechanisms of toxicity
 - Endowed award that predates SOT Endowment Fund framework
 - Administrator: John Clarke
- Applicants must submit cover letter, abstract, personal statement, + 2 letters of support
 - Finalists are selected and must submit a full manuscript of the submitted project for final judging
 - 3 recipients: 1st, 2nd, 3rd
 - ~\$750-\$2000* award

Sincerest Appreciation to Carl C. Smith Award Judges



• First Round—Abstract Judges

- Julia Cui, University of Washington
- Sarah Campion, Pfizer
- Douglas Keller, Sanofi
- Udayan Apte, University of Kansas Medical Center
- Kristen Mitchell, Boise State University

• Second Round—Manuscript Judges

- Jason Fritz, US EPA-OECA
- Julie Gosse, University of Maine
- Hannele Huuskonen, European Chemicals Agency
- Daniel R. Dietrich, University of Konstanz
- David Williams, Oregon State University
- Jeffrey Willy, Vertex Pharmaceuticals
- Iván Csanaky, Children's Mercy Hospital



THANK YOU!!

Carl C. Smith Student Mechanisms Award Finalists!



Colin Anderson, University of Colorado

Reena Berman, University of Colorado

Melissa Clemens, University of Arkansas for Medical Sciences

Emily Marques, University of Rhode Island

Archit Rastogi, University of Massachusetts at Amherst

Christine Rygiel, University of Michigan

Cody Jozef Schmidlin, University of Arizona

Regina Schnegelberger, University of Pittsburgh

Carl C. Smith Student Mechanisms Award Recipients!



1st Place

Colin Anderson, University of Colorado

Methylation of Dithiocarbamate Fungicide Maneg Reveals Potential Toxic Mechanisms in Neuroblastoma

PI: James R. Roede

2nd Place

Cody Jozef Schmidlin, University of Arizona

Chronic Arsenic Exposure Promotes Invasion and Migration via NRF2 Regulation of SOX9

PI: Donna D. Zhang

3rd Place

Archit Rastogi, University of Massachusetts at Amherst

Modulating Glutathione Thiol Status Alters Pancreatic Beta-Cell Morphogenesis in the Developing Zebrafish (Danio rerio)

Embryo

PI: Alicia R. Timme-Laragy



Thank you all for your continued support of the Mechanisms SS!!

Please plan to join us in sunny Orlando next year!

March 14-18, 2021

Orange County Convention Center

Orlando, Florida

**SOT 2021 Abstract Submission Deadline:
October 16, 2020**