

Author Index

- Abbink, Peter, 2744
 Abbondante, Serena, 2767
 Adam, Kieran, 2824
 Ahn, Jeeyoon Jennifer, 2664
 Aid, Malika, 2744
 Alcover, Andrés, 2624
 Alves, Joana, 2683
 Ambiel, Ina, 2731
 Anderson, Charles D., 2842
 Arbanas, Jaren M., 2579
 Arora, Sakshi, 2731
 Avau, Anneleen, 2654
- Badamchi-Zadeh, Alexander, 2744
 Bai, Fangfang, 2710
 Ban, Yuguang, 2579
 Banerjee, Priyankana, 2776
 Barouch, Dan H., 2744
 Barth, Nicole D., 2602
 Barwick, Benjamin G., 2799
 Bass, Isaac, 2700
 Bastian, David, 2812
 Basu, Uttiya, 2527
 Berghmans, Nele, 2654
 Bian, Xianli, 2570
 Blass, Eryn, 2744
 Blazar, Bruce R., 2612
 Blom, Anna M., 2721
 Boss, Jeremy M., 2799
 Botto, Marina, 2700
 Bouchet, Jérôme, 2624
 Boudaud, Marie, 2787
 Brasier, Allan R., 2753
 Brown, Deborah, 2683
 Burdon, Tom, 2683
 Burton, Oliver, 2654
 Bush, Stephen J., 2683
- Cambier, John C., 2641
 Carr, Caleb, 2700
 Chazara, Olympe, 2593
 Che, Chengye, 2767
 Cheeseman, Michael T., 2683
 Chen, Edward L. Y., 2664
 Chen, Hung-Lin, 2612
 Chen, Xi, 2579
 Cheng, Chen, 2557
 Cho, Daeho, 2832
 Chu, Manman, 2557
 Clohisey, Sara, 2683
 Colucci, Francesco, 2593
 Creemers, John W., 2612
 Croy, B. Anne, 2551
 Crute, Bergren W., 2641
 Cuhe, Céline, 2624
 Cui, Guoliang, 2731
- Daenthanasanmak, Anusara, 2812
 Davis, Gemma M., 2683
 Davis, Jonathan H., 2579
 de Jesus Carrion, Steven, 2767
 de Somer, Lien, 2654
 del Río-Iñiguez, Iratxe, 2624
 DeOliveira, Rosane B., 2700
 Di Bartolo, Vincenzo, 2624
 Dragovich, Matthew A., 2824
 Dransfield, Ian, 2602
 Duan, Ruonan, 2570
 Dunn, Shannon E., 2664
- Egilmez, Nejat K., 2842
 El Abiad, Rami G., 2612
- Elliott, David E., 2612
 Ermert, David, 2721
 Evans, David T., 2776
- Fackler, Oliver T., 2731
 Fan, Haitao, 2557
 Flynn, JoAnne L., 2541
- Gale, Andrew J., 2602
 Gao, Fei, 2570
 Gao, Shang, 2570
 Gao, You, 2557
 Garg, Nisha J., 2753
 Garofalo, Roberto P., 2753
 Getahun, Andrew, 2641
 Ghadially, Hormas, 2593
 Golos, Thaddeus G., 2776
 Gose, Severin, 2700
 Grabert, Kathleen, 2683
 Granda, Andres G., III, 2776
 Guan, Xiaqun, 2612
 Gulati, Sunita, 2700
 Guo, Lei, 2557
- Haines, Robert R., 2799
 Han, Byung Woo, 2832
 He, Zhanlong, 2557
 Heeb, Mary Jo, 2602
 Higuchi, Darryl A., 2551
 Hilton, Hugo G., 2593
 Hise, Amy G., 2767
 Hosakote, Yashoda M., 2753
 Hower, Suzanne, 2710
 Hsiung, Sunnie, 2579
 Huang, Xing, 2557
 Huhn, Oisín, 2593
 Hume, David A., 2683
- Iampietro, M. Justin, 2744
 Iamsawat, Supinya, 2812
 Imbrechts, Maya, 2654
 Imle, Andrea, 2731
 Ince, M. Nedim, 2612
 Irvine, Darrell J., 2744
 Ito, Mitsutero, 2593
 Ivarsson, Martin A., 2593
- Janaka, Sanath Kumar, 2776
 Jayaraman, Jyothi, 2593
 Jung, Hak-Jun, 2832
 Junius, Steffie, 2654
- Kaplan, Mark H., 2612
 Karacay, Bahri, 2612
 Karmakar, Mausita, 2767
 Kaw, Sheetal, 2731
 Keegan, James, 2579
 Kim, Tae Sung, 2832
 Kinnear, Ekaterina, 2744
 Kling, Christiane, 2593
 Kurosky, Alexander, 2753
- Laabei, Maisem, 2721
 Lamas-Murua, Miguel, 2731
 Lambris, John D., 2721
 Larocca, Rafael A., 2744
 Lee, Arim, 2832
 Leeman-Neill, Rebecca J., 2527
 Lefevre, Lucas, 2683
 Lewis, Lisa A., 2700
 Li, Bingxiang, 2557
 Li, Heng, 2557
- Li, Hongzhe, 2557
 Li, Jiangxia, 2570
 Li, Jiaqi, 2557
 Li, Nan, 2557
 Li, Qingsheng, 2842
 Li, Xi, 2570
 Li, Yan, 2570
 Li, Yue, 2612
 Lichtenheld, Mathias G., 2710
 Lim, Hui Xuan, 2832
 Lim, Junghyun, 2527
 Lin, Philana Ling, 2541
 Lisowski, Zofia M., 2683
 Liston, Adrian, 2654
 Liu, Chen, 2812
 Liu, Guanghui, 2721
 Liu, Longding, 2557
 Liu, Qiji, 2570
 Liu, Weiren, 2612
 Long, Feng, 2570
 Long, Haiting, 2557
 Loubeau, Martine, 2579
 Lyck, Ruth, 2731
- Ma, Xiaochun, 2570
 Mabbott, Neil A., 2683
 Majumder, Parimal, 2799
 Malek, Thomas R., 2579
 Malengier-Devlies, Bert, 2654
 Marwick, John A., 2602
 Matthys, Patrick, 2654
 McCormack, Ryan M., 2710
 Meek, Stephen, 2683
 Mitera, Tania, 2654
 Moffett, Ashley, 2593
 Mor, Adam, 2824
 Moro, Alejandro, 2579
 Moynihan, Kelly D., 2744
 Munson, George P., 2710
- Nguyen, Hung, 2812
 Ning, Ruotong, 2557
 Norman, Paul J., 2593
- O'Connor, David H., 2776
- Parham, Peter, 2593
 Park, Si Hoon, 2832
 Pearlman, Eric, 2767
 Peled, Michael, 2824
 Penaloza-MacMaster, Pablo, 2744
 Pesu, Marko, 2612
 Piccardo, Pedro, 2683
 Plano, Gregory V., 2710
 Plougastel-Douglas, Beatrice, 2551
 Pridans, Clare, 2683
 Provine, Nicholas M., 2744
 Put, Karen, 2654
- Ram, Sanjay, 2700
 Randall, Troy D., 2799
 Raper, Anna, 2683
 Rayavara, Kempaiah, 2753
 Reed, George W., 2700
 Regan, Tim, 2683
 Reif, Tatjana, 2731
 Retière, Christelle, 2593
 Rice, Peter A., 2700
 Ries, Moritz, 2776
 Riesbeck, Kristian, 2721

- Rojo, Rocío, 2683
Rola-Pleszczynski, Marek, 2787
Rossi, Adriano G., 2602
- Sauter, Kristin A., 2683
Scharer, Christopher D., 2799
Sharkey, Andrew M., 2593
Shaughnessy, Jutamas, 2700
Shi, Haijing, 2557
Smith, Lee B., 2683
Sojka, Dorothy K., 2551
Song, Jie, 2557
Spaner, David, 2664
Stafford, Susan J., 2753
Stankova, Jana, 2787
Stein, Jens V., 2731
Stickler, Natalie H., 2664
Stolp, Bettina, 2731
Strazza, Marianne, 2824
Struthers, Mary, 2579
Summers, Kim M., 2683
Sun, Ming, 2557
Sun, Wenjie, 2570
Sun, Yan, 2767
Sutherland, Linda, 2683
- Tanaka, Motomu, 2731
Thankappan, Anil, 2579
Thoma, Judith, 2731
Thomson, Alison J., 2683
Tibroni, Nadine, 2731
Tocheva, Anna S., 2824
Traherne, James A., 2593
Trautz, Birthe, 2731
Tregoning, John S., 2744
Trowsdale, John, 2593
Truscott, Jamie, 2612
Tsai, Yi Ting, 2683
Tsopoulidis, Nikolaos, 2731
Turcotte, Sylvie, 2787
- Upton, Kyle R., 2683
Urban, Joseph F., Jr., 2612
- Vandenhoute, Jessica, 2654
Vázquez-Chávez, Elena, 2624
Vega, Irving E., 2824
Venkatesan, Timothy C., 2593
Voss, Jessica Heinrichs, 2812
- Walker, Melissa M., 2641
Wallace, Robert, 2683
Wang, Jingjing, 2557
Ward, Natasha C., 2579
Wei, Shijun, 2570
Wiseman, Roger, 2776
Wouters, Carine, 2654
Wu, Jingxia, 2731
Wu, Qiongwen, 2557
- Yamniuk, Aaron P., 2579
Yang, Jinxi, 2557
Yang, Liping, 2551
Yang, Zening, 2557
Yi, Tae Joon, 2664
Yokoyama, Wayne M., 2551
Yu, Aixin, 2579
Yu, Wenhai, 2557
Yu, Xue-Zhong, 2812
Yuan, Qianqian, 2570
- Zhao, Fei Linda, 2664
Zheng, Bo, 2700
Zheng, Huiwen, 2557
Zúñiga-Pflücker, Juan Carlos, 2664

AAI AWARDS

*Recognizing Scientists of Distinction
in Every Career Stage*



THE AMERICAN ASSOCIATION OF IMMUNOLOGISTS

The American Association of Immunologists annually honors the research achievements and professional promise of over **1,000** scientists through fellowships, career awards, and travel grants.

AAI Fellowships provide Regular and Trainee members with career advancement opportunities through programs supporting trainees' salaries and public policy education.

AAI Career Awards honor individuals for outstanding research and career achievements. AAI members are eligible for these career awards, which are among the leading professional honors presented annually to immunologists.

AAI Travel Awards and Grants recognize the professional promise of early- and mid-career investigators by assisting them with travel to the AAI annual meeting and travel to learn techniques.

In its commitment to the cultivation of career opportunities for promising young scientists, AAI also provides support for over 100 travel awards at selected other immunology conferences.



Let AAI Help You Advance Your Career!

To view AAI individual awards, visit www.aai.org/Awards.

To join AAI, visit www.aai.org/Membership.

The Career Advisory Board

A RESOURCE FOR SENIOR POSTDOCS AND EARLY-CAREER FACULTY



Have you just started your first lab? Trying to juggle research, teaching, and service?
Are you facing new and puzzling issues that an established scientist can answer?

The Career Advisory Board (CAB) is a referral service that matches senior postdocs (start of fourth year and beyond) and early-career PIs who submit requests for guidance on specific career issues with more senior scientists with experience and insights in those areas. The program is not meant to replace the mentoring programs at a scientist's home institution, but rather to serve as a resource for senior postdocs and early-career PIs to obtain advice on a specific question from established investigators outside of their home institutions—often through a single phone call.



ELIGIBILITY: The CAB is open to all senior postdocs (start of fourth year and beyond) and early-faculty AAI members.

APPLY HERE: <http://aai.org/CAB>

Selected Topics

- Balancing family and work
- Timing for first grant submission
- Recruiting
- Handling personnel issues
- Managing a lab
- Finding a mentor
- Building networks
- Preparing for leadership
- Balancing service obligations
- Teaching
- Serving on NIH study sections



You have the power.

Your membership in the American Association of Immunologists helps advance the field—and your career.

Being a part of AAI enables you to take an active role in helping to shape the future of immunology and attain your professional goals. You'll stand with members representing immunological research concerns on Capitol Hill. Plus, you gain access to:

- The best and brightest minds today.
- The world's largest annual all-immunology meeting.
- *The Journal of Immunology*, the pre-eminent peer-reviewed journal in the field.
- Many occasions and opportunities to present your research.
- Awards/fellowships/grants to support talented scientists in every career stage.

To learn more about how your professional life is enriched by membership in AAI, call 301.634.7195 or visit www.aai.org today.



IMMUNOLOGY 2019™



May 9–13, 2019
AAI Annual Meeting
San Diego, California



103RD ANNUAL MEETING OF THE AMERICAN ASSOCIATION OF IMMUNOLOGISTS (AAI)

Call for 2019 Award Applications

Deadline: January 14, 2019

Applications are invited for the following AAI Travel Awards and Grants, which annually foster the promise and professional development of investigators at all career stages.

Lefrançois-BioLegend Memorial Award

Established to honor the memory of AAI member Dr. Leo Lefrançois, this award is intended to advance the career of a trainee who attends the AAI annual meeting and presents an outstanding abstract specifically in the area of mucosal immunology. The award recipient will receive a \$1,000 cash award and a certificate during an awards presentation program at the AAI annual meeting. *This award is generously supported through a grant from BioLegend and donations from friends and colleagues of Dr. Lefrançois.*

AAI Trainee Poster Awards

These awards provide up to \$300 in travel reimbursement to AAI trainee members whose first-author abstracts submitted to the AAI annual meeting are selected for poster sessions only and found to be exceptional by the AAI Abstract Programming Chairs. Selection is based on the originality and significance of the research being presented.

Pfizer-Showell Travel Award

This award recognizes the professional promise of an early career investigator (assistant professor or equivalent) by assisting the award recipient with travel to the AAI annual meeting. Selection is based on career progress and submission of an outstanding abstract selected for oral presentation in a block symposium at the meeting. The award recipient will be recognized and presented with a certificate at an awards presentation program at the AAI annual meeting. Support of up to \$1,500 will be provided for meeting registration and travel. *This award is supported through an endowment from Henry J. Showell and Pfizer, Inc.*

AAI-Thermo Fisher Trainee Achievement Awards

These awards recognize up to six promising trainees in the field of immunology. Selection is based on career promise and presentation of an outstanding first-author abstract selected for oral presentation in a block symposium. Awardees will receive a \$1,000 cash award and reimbursement for meeting expenses. *These awards are generously supported by Thermo Fisher Scientific.*

AAI Early Career Faculty Travel Grants

These grants assist young investigators (assistant professor or equivalent) in attending the AAI annual meeting. Recipients will be reimbursed up to \$1,250 for registration and travel expenses.

Chambers-Thermo Fisher Scientific Memorial Award

Established to honor the memory of AAI member Dr. Cynthia Chambers, this award is intended to advance the career of an early career scientist who attends the AAI annual meeting and presents an outstanding abstract specifically in the area of cancer biology. The award recipient will receive a \$1,000 cash award and a certificate during an awards presentation program at the AAI annual meeting. *This award is generously supported through a grant from Thermo Fisher Scientific.*

Lustgarten-Thermo Fisher Scientific Memorial Award

Established to honor the memory of AAI member Dr. Joseph Lustgarten, this award is intended to advance the career of a mid-career scientist who attends the AAI annual meeting and presents an outstanding abstract specifically in the area of immune regulation. The award recipient will receive up to \$1,250 in travel reimbursement and a certificate during an awards presentation program at the AAI annual meeting. *This award is generously supported through a grant from Thermo Fisher Scientific.*

AAI Trainee Abstract Awards

These awards provide up to \$750 in travel reimbursement to AAI trainee members whose first-author abstracts submitted to the AAI annual meeting are selected for presentation in block symposia.

AAI Undergraduate Faculty Travel Grants

These grants assist undergraduate faculty in attending the AAI annual meeting. Each grant will also support travel costs for an undergraduate student of the recipient's selection. A grant of up to \$1,250 is awarded to the undergraduate faculty member, and a grant of up to \$1,000 is awarded to the selected undergraduate student.

AAI Laboratory Travel Grants

These grants assist mid-career and senior investigators in attending the AAI annual meeting. Applicants must hold an appointment of associate professor, full professor, or equivalent; have limited research funding; and be a first or last author on one or more abstracts submitted to the annual meeting. Each grant will provide two travel awards of up to \$1,250 each: one to the PI or laboratory director and another to a member of his or her lab, chosen by the PI or laboratory director. Recipients will be reimbursed for registration and travel expenses.

For complete AAI Travel Award and Grant application details, visit www.AAI.org/Awards.

The 2019 AAI Awards will be presented in conjunction with

IMMUNOLOGY 2019™

May 9–13, 2019 • San Diego, California

Questions? Contact AAI at 301-634-7178 or awards@aai.org

IMMUNOLOGY 2019™

103RD ANNUAL MEETING OF THE AMERICAN ASSOCIATION OF IMMUNOLOGISTS
SAN DIEGO CONVENTION CENTER | SAN DIEGO, CA

SAVE THE DATE: THURSDAY, MAY 9 – MONDAY, MAY 13



ABSTRACT SUBMISSION

Abstract Submission Opens.....November 28, 2018
Abstract Submission Closes.....January 14, 2019

REGISTRATION

Registration Opens.....December 18, 2018
Early Registration Discount Ends..... March 29, 2019

AWARDS

Career Award Nominations Due October 31, 2018
Travel Award & Grant Applications OpenNovember 28, 2018
Travel Award & Grant Applications DueJanuary 14, 2019

HOUSING

Discounted Housing Reservations Now Open
Discounted Hotel Rates End..... April 5, 2019

IMMUNOLOGY 2019™ attendees receive deep discounts on hotels in the official AAI room block.
Reserve yours now at www.IMMUNOLOGY2019.org. Book now, pay later!

