

# Pelotonia Fellowship Program Annual Report

*Creating a cancer-free world*



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# Welcome

Greetings, and welcome to the first Pelotonia Fellowship Program Annual Report. It's truly an honor to be writing about such a remarkable program, and we're excited to tell you about many of our accomplishments over the past year.

To date, we've funded 118 projects. These projects have been incredibly successful in moving us toward our goal of one day living in a cancer-free world. Our fellows have made discoveries that are published in prestigious journals, the data collected from their projects have been used in applications for bigger grants, they have received additional awards and are now going on to graduate and medical schools and into postdoctoral, industry and faculty appointments.

We're very proud of the diversity and transparency of our program. If you look at the data in this report, you will see we've funded projects from 34 departments in eight different colleges around Ohio State. We understand that new discoveries occur when people look at problems from different points of view. Funding talented student researchers in diverse disciplines like Engineering, Physics and Business to help in our fight against cancer pays tremendous dividends.

To see all of the projects we've funded, including the name of each awardee, their mentor, the title of their project and a simplified project description, go to our website: [go.osu.edu/pelotoniafellowships](http://go.osu.edu/pelotoniafellowships). On this site, we also list our committee members, the dates applications are due, our application scoring criteria and our fellowship guidelines.

A program like this would not be successful if it weren't for the hard work of all of our 18 committee members who represent 13 different departments. They are incredibly dedicated to the success of this program, and we thank them for the time they put into it. Special thanks to Amanda Simcox, PhD, for her work helping develop our undergraduate and international programs and Denis Guttridge, PhD, for helping develop our graduate program. We are also thankful to the Pelotonia participants (both traditional and virtual riders, volunteers and donors), OSU faculty, departments, colleges and especially the graduate program for supporting and providing matching funds to this program.

Cancer is a complicated disease, and if we are to reach our goal of one day living in a cancer-free world, we need to develop cures by taking a multidisciplinary approach. The Pelotonia Fellowship Program funds cutting-edge cancer research by the best undergraduate, graduate, medical and postdoctoral students, regardless of their field of study. These students move the field of cancer research forward by making new discoveries, and have the potential to become independent cancer researchers.

Even though this fellowship program has had some amazing accomplishments in a short period of time, moving forward, emphasis will be put on raising the bar on quality applications; increasing diversity in all programs with a focus on undergraduate students; extending medical student program to the colleges of Veterinary Medicine (DVMs), Pharmacy (PharmDs), Optometry (ODs) and Dentistry (DDSs); increasing pool of Population Science, Clinical and Biomedical Informatics applications.

Sincerely,

**Michael Caligiuri, MD**

Director, The Ohio State University  
Comprehensive Cancer Center  
CEO, James Cancer Hospital and  
Solove Research Institute

**Gustavo Leone, PhD**

Associate Director Basic Research  
The Ohio State University  
Comprehensive Cancer Center-James  
Cancer Hospital and Solove Research  
Institute, Co-Director Pelotonia  
Fellowship Program

**Jan Kiecolt-Glaser, PhD**

Director, Division of Health Psychology  
Department of Psychiatry, Co-Director  
Pelotonia Fellowship Program

# Fellowship Committee

The Pelotonia Fellowship Committee is chaired by Gustavo Leone, PhD, and co-chaired by Jan Kiecolt-Glaser, PhD. The committee is made up of some of Ohio State's most well-known cancer researchers. This committee meets several times per year to review all applications and make all major program decisions. They represent departments as diverse as Molecular Genetics and Internal Medicine to Psychology and Human Nutrition. Larry Mathes, PhD, moderates our postdoctoral reviews, assuring the reviews are fair, rigorous, and unbiased. Committee members are listed below:

## Committee Members:

**Barbara Andersen, PhD**, College of Arts and Sciences, Department of Psychology  
**Irina Artsimovitch, PhD**, College of Arts and Sciences, Department of Microbiology  
**Martha Belury, PhD**, College of Education and Human Ecology, Department of Human Nutrition  
**Kathleen Boris-Lawrie, PhD**, College of Veterinary Medicine, Department of Veterinary Biosciences  
**David Cohn, MD**, College of Medicine, Department of Obstetrics and Gynecology  
**Samir Ghadiali, PhD**, College of Engineering, Department of Biomedical Engineering  
**Joanna Groden, PhD**, College of Medicine, Department of Molecular Virology, Immunology & Medical Genetics  
**Erich Grotewold, PhD**, College of Arts and Sciences, Department of Molecular Genetics  
**Denis Guttridge, PhD**, College of Medicine, Department of Molecular Virology, Immunology & Medical Genetics  
**Janice Kiecolt-Glaser, PhD**, College of Medicine, Institute for Behavioral Medicine Research  
**Gustavo Leone, PhD**, College of Medicine, Department of Molecular Virology, Immunology & Medical Genetics  
**Guido Marcucci, MD**, College of Medicine, Department of Internal Medicine  
**Mike Ostrowski, PhD**, College of Medicine, Department of Molecular and Cellular Biochemistry  
**Greg Otterson, MD**, College of Medicine, Department of Internal Medicine  
**Jeffrey Parvin, MD, PhD**, College of Medicine, Department of Biomedical Informatics  
**Amanda Simcox, PhD**, College of Arts and Sciences, Department of Molecular Genetics  
**Miguel Villalona, MD**, College of Medicine, Department of Internal Medicine  
**Mary Ellen Wewers, PhD**, College of Public Health, Department of Health Behavior and Health Promotion

## Senior Program Moderator:

**Larry Mathes, PhD**, College of Veterinary Medicine, Department of Veterinary Biosciences

## Internal Advisors:

**William Carson III, MD** - Innate Immunity Research Program Leader  
**Steven Clinton, MD, PhD** - Molecular Carcinogenesis and Chemoprevention Research Program Leader  
**Albert de la Chapelle MD, PhD** - Molecular Biology & Cancer Genetics Research Program Leader  
**Patrick Green, PhD** - Viral Oncology Research Program Leader  
**Michael Grever, MD** - Experimental Therapeutics Research Program Leader  
**Samson Jacob, PhD** - Experimental Therapeutics Research Program Leader  
**Michael Ostrowski, PhD** - Molecular Biology & Cancer Genetics Research Program Leader  
**Electra Paskett, PhD** - Cancer Control Research Program

## External Advisors:

**2011** **Ross Levine, MD**  
Geoffrey Beene Junior Faculty Chair  
Memorial Sloan-Kettering Cancer Center

**John H. J. Petrini, PhD**  
Paul A. Marks Chair of Molecular Cell Biology  
Head, Laboratory of Chromosome Biology  
Memorial Sloan-Kettering Cancer Center

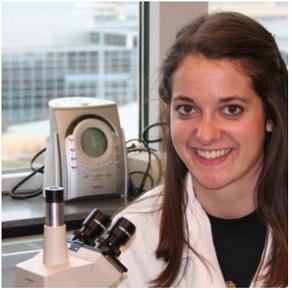
**Judith Campisi, PhD**  
Professor, Buck Institute for Age Research Sr Scientist,  
Lawrence Berkeley National Laboratory

**2012** **Charles J. Sherr, MD, PhD**  
Member, St. Jude Children's Research Hospital Faculty  
Chair, Tumor Cell Biology  
Investigator, Howard Hughes Medical Institute  
Co-Director, Molecular Oncology Program  
Herrick Foundation Chair

**Martine F. Rousset, PhD**  
Member, St. Jude Children's Research Hospital Faculty  
Endowed Chair in Molecular Oncogenesis  
Co-Director, Cancer Center Signal Transduction Program  
Professor, Department of Molecular Sciences  
The University of Tennessee Memphis

**David E. Fisher, MD, PhD**  
Chief, Department of Dermatology  
Massachusetts General Hospital  
Edward Wigglesworth Professor of Dermatology  
Harvard Medical School



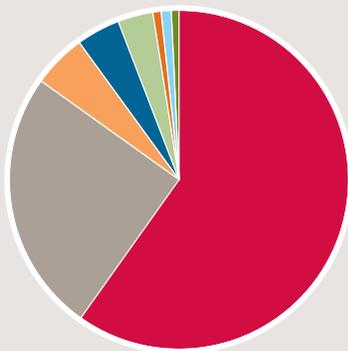


# Projects Funded

The Pelotonia Fellowship program is an interdisciplinary program that has funded the following:

- 56 Undergraduate Awards**
- 32 Graduate Awards**
- 2 Medical Student Awards**
- 28 Postdoctoral Awards**

Mentors come from 34 different departments in 8 of the University's colleges.

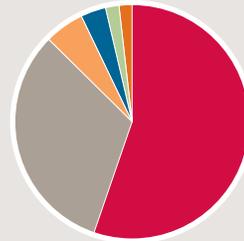


### Colleges-All Fellowships

■ Medicine	72	Medicine
■ Arts and Sciences	30	Arts and Sciences
■ Engineering	6	Engineering
■ Pharmacy	5	Pharmacy
■ Education and Human Ecology	4	Education and Human Ecology
■ Dentistry	1	Dentistry
■ Food, Agricultural and Environmental Sciences	1	Food, Agricultural, and Environmental Sciences
■ Veterinary Medicine	1	Veterinary Medicine

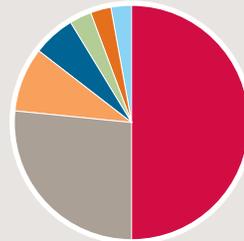
### Departments - All Fellowships

24	Molecular Virology, Immunology and Medical Genetics	2	Physiology and Cell Biology
20	Internal Medicine	2	Urology
19	Molecular Genetics	1	Biochemistry
7	Molecular and Cellular Biochemistry	1	Biomedical Engineering
5	Neurological Surgery	1	Biomedical Informatics
4	Physics	1	Communication (School of)
3	Pathology	1	Comparative Studies
2	Behavioral Medicine Research (Institute for)	1	Food Science and Technology
2	Chemical and Biomolecular Engineering	1	History
2	Chemistry	1	Immunobiology
2	Computer Science and Engineering	1	Mechanical Engineering
2	Human Nutrition	1	Medicinal Chemistry and Pharmacognosy (Division)
2	Medicinal Chemistry (Division)	1	Microbial Infection and Immunity
2	Pediatrics (Children's Hospital)	1	Oral Surgery, Pathology and Anesthesiology (Division)
2	Pharmaceutics (Division)	1	Psychology
2	Physical Activity and Educational Services (PAES)-School	1	Radiology
		1	Surgery
		1	Veterinary Biosciences



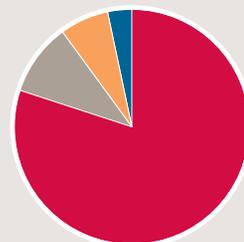
### Colleges-Undergraduate Fellowships

■ Medicine	31	Medicine
■ Arts and Sciences	18	Arts and Sciences
■ Education and Human Ecology	3	Education and Human Ecology
■ Pharmacy	2	Pharmacy
■ Dentistry	1	Dentistry
■ Engineering	1	Engineering



### Colleges-Graduate/Medical Fellowships

■ Medicine	17	Medicine
■ Arts and Sciences	9	Arts and Sciences
■ Engineering	3	Engineering
■ Pharmacy	2	Pharmacy
■ Education and Human Ecology	1	Education and Human Ecology
■ Food, Agricultural, and Environmental Sciences	1	Food, Agricultural, and Environmental Sciences
■ Veterinary Medicine	1	Veterinary Medicine



### Colleges-Postdoctoral Fellowships

■ Medicine	24	Medicine
■ Arts and Sciences	3	Arts and Sciences
■ Engineering	2	Engineering
■ Pharmacy	1	Pharmacy



## Selected Pelotonia Fellowship Publications

- Madhu M. Ouseph, Jing Li, **Hui-Zi Chen**, **Thierry Pecot**, Pamela Wenzel, John C. Thompson, Grant Comstock, **Veda Chokshi**, et al. (2012). Atypical E2F Repressors and Activators Coordinate Placental Development. *Developmental Cell* 22, 849-862
- Zorko NA**, Bernot KM, Whitman SP, **Siebenaler RF**, Ahmed EA, Marcucci GG, **Yanes DA**, et al. Mll-Partial Tandem Duplication and Flt3-Internal Tandem Duplication in a Double Knock-in Mouse Recapitulates Features of Counterpart Human Acute Myeloid Leukemias. *Blood*. 2012. Accepted.
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- Chen MC**, **Chen CH**, **Chuang HC**, et al. (2011). Novel mechanism by which histone deacetylase inhibitors facilitate topoisomerase I $\alpha$  degradation in hepatocellular carcinoma cells. *Hepatology*. 53, 148-59
- Lee SL**, **Hsu EC**, **Chou CC**, **Chuang HC**, et al. (2011). Identification and characterization of a novel integrin-linked kinase inhibitor. *J Med Chem*. 54, 6364-74
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- Pecot T**, Singh S, **Caserta E**, et al. Non parametric cell nuclei segmentation based on a tracking over depth from 3D fluorescence confocal images. *Proceedings of the International Symposium on Biomedical Imaging*, to be published in May 2012
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- Zhou, C.**, et al. SPANosomes as delivery vehicles for small interfering RNA (siRNA). *Mol Pharm*. 9: 201-210, 2012
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# Pelotonia Fellowship Highlights

## Undergraduate students moved onto...

- The Ohio State University School of Pharmacy PhD Program (**Parker Brumfield**)
- Penn State College of Medicine (**Michael Chen**)
- Nationwide Children's Hospital's Biospecimen Core Repository Research Specialist (**Clint Christman**)
- Lake Erie College of Osteopathic Medicine (**Tyler Church**)
- The Ohio State University College of Medicine (**Shauna Collins, Joseph Meyers, Sean Moore**)
- Drexel College of Medicine (**Jimna Deslandes**)
- Johns Hopkins University School of Medicine-Medical Scientist Training Program MD/PhD program (**Dustin Gable**)
- University of Chicago Ecology and Evolution Department PhD Program (**Molly Gallagher**)
- University of North Carolina Biomedical Sciences PhD Program (**Kelsey Gray**)
- Mt. Carmel East Emergency Department scribe (**Paul Gruenbacher**)
- Massachusetts Institute of Technology (MIT) Chemical Engineering PhD Program (**Kevin Kauffman**)
- The Ohio State University Physics PhD Program (**Danielle Kelly**)
- University of Cincinnati College of Medicine (**Grace Miller**)
- Brandeis University Molecular and Cellular Biology PhD Program (**Mariya Nudel**)
- University of Pittsburgh School of Dental Medicine (**Ryan Orlosky**)
- University of Michigan Medical School (**Jason Pradarelli**)
- The Ohio State University Integrated Biomedical Graduate PhD Program (**Carlee Schaefer**)
- Teach for America (**Kathryn Takamura**)
- Northwestern University Graduate Program in Genetic Counseling (**Elizabeth Ulm**)
- Yale University Molecular Biophysics and Biochemistry PhD Program (**Emily Wong**)

## Graduate/Medical students moved onto...

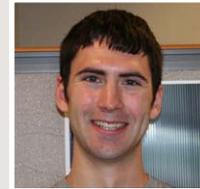
- The Ohio State University Medical Scientist Training Program MD/PhD program (**Kyle Beckwith, Huizi Chen, Patrick Grierson**)
- The Ohio State University Howard Hughes Medical Institute (HHMI) MED into GRADS Scholars Program (**Rachel Zielinski**)
- MD Anderson Cancer Center Department of Genetics postdoctoral fellow (**Maurisa Riley Croce, PhD**)
- Stanford University Postdoctoral Researcher (**Nripesh Dhungel**)
- University of Washington Medical Center Psychology Intern (**Salene Wu**)

## Postdoctoral Fellows moved onto...

- Mair GmbH, Chief Technical Officer (CTO), Austria (**Markus Mair, PhD**)
- Medical University of South Carolina Assistant Professor (**Alice Mims, MD**)
- Institutes of Life Sciences, Bhubaneswar, India Assistant Professor (**Shantibhusan Senapati, PhD**)
- American Cancer Society Postdoctoral Fellowship (**Lisa Jaremka, PhD**)

## Featured Undergraduate Student

**Kevin Kauffman**—Kevin received an undergraduate fellowship in 2010 to develop microparticles loaded with chemotherapeutics which could be inhaled by lung cancer patients. Kevin was a featured speaker at our 2011 Pelotonia Fellowship Symposium, has 2 publications, including a first author paper in the *International Journal of Pharmaceutics*, and is currently in a PhD program in Chemical Engineering at Massachusetts Institute of Technology (MIT).  
**(Mentor-Kristy Ainslie, PhD)**



## Featured Medical Student

**Kyle Beckwith**—Kyle took a year off from medical school to do a concentrated research fellowship working on developing a mouse model so studies may be done on the effects of new drugs for chronic lymphocytic leukemia (CLL). Kyle's fellowship has been so productive he decided to pursue a PhD in addition to an MD and has been accepted into Ohio State's Medical Scientist Training Program (MD/PhD program).  
**(Mentor-Natarajan Muthusamy, DVM, PhD)**



## Featured Graduate Student

**Nripesh Dhungel**—Nripesh received a graduate fellowship to investigate the cytoplasmic function of the tRNA splicing endonuclease. Nripesh will soon be graduating and has published a first author paper in a prestigious journal, *Genes & Development*.  
**(Mentor-Anita Hopper, PhD)**



## Featured Postdoctoral Fellow

**Alice Mims, MD**—Dr. Mims received a postdoctoral fellowship to translational research evaluating the effects of manipulating microRNA in leukemia cells. Dr. Mims is now an assistant professor at the Medical University of South Carolina where she will be treating patients with hematologic malignancies and those in need of stem cell transplants and continue translational research in drug development for hematologic malignancies.  
**(Mentor-Guido Marcucci, MD)**



## International Program

Creating a cancer free world and a global research environment come together with the Pelotonia International Fellowship Program.

Snapshot from India exchange program.  
(See website for more details)

