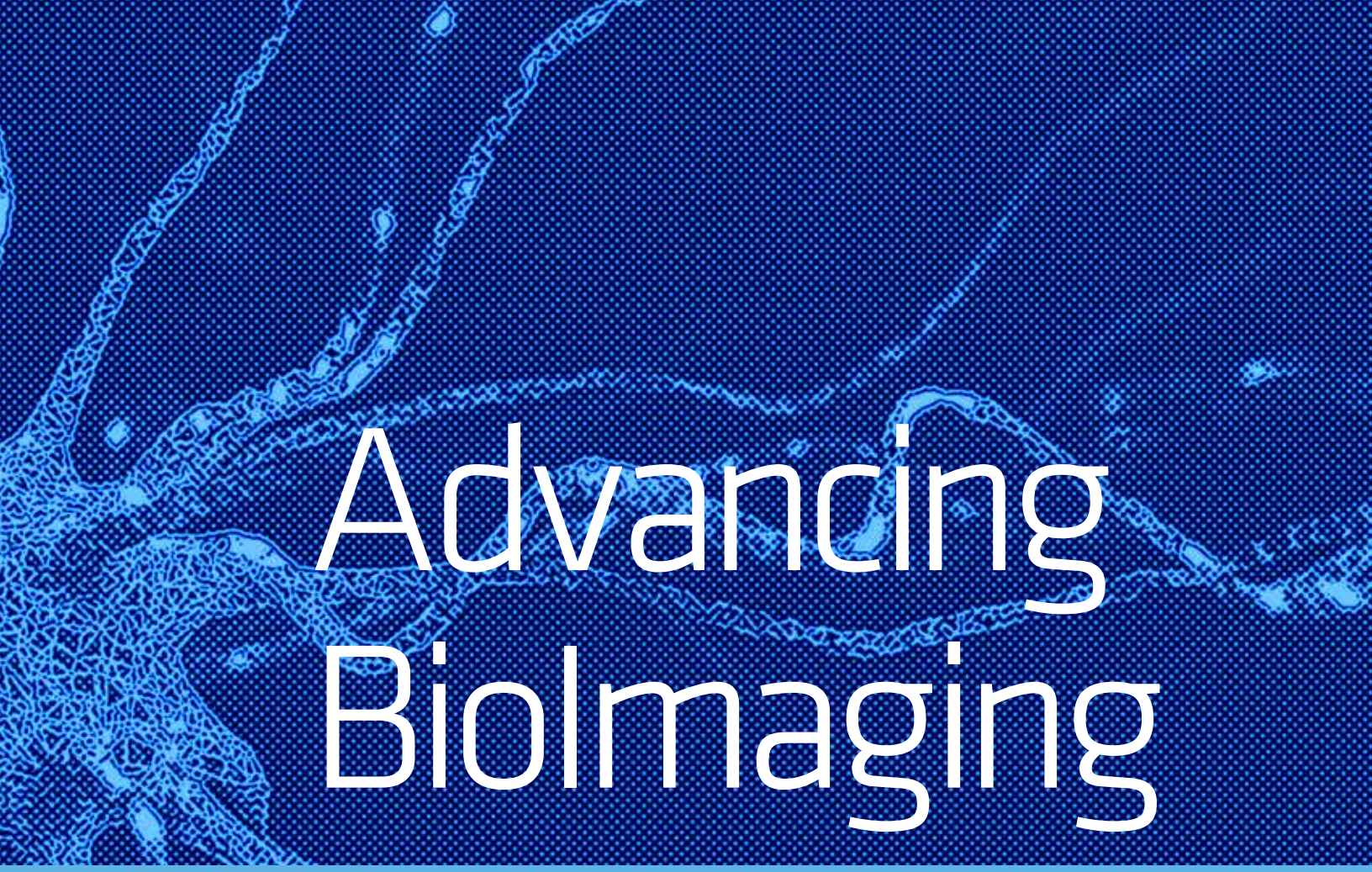


Advancing BioImaging

The Second Annual Scialog Conference
May 19–22, 2022

scialog2022®

Chan Zuckerberg Initiative

WILDER FOUNDATION

RESEARCH CORPORATION *for* SCIENCE ADVANCEMENT

THE FREDERICK GARDNER COTTRELL FOUNDATION

Objectives

Engage in dialogue with the goal of accelerating high-risk/high-reward research.

Identify and analyze bottlenecks to advance fundamental imaging science and improve its ability to impact human health and our understanding of biological structures and their function.

Build a creative, better-networked community across disciplinary silos that is more likely to produce scientific breakthroughs.

Form teams to write proposals to seed novel projects based on highly innovative ideas that emerge at the conference.

Process

Brainstorming is welcome; don't be afraid to say what comes to mind.

Consider the possibility of unorthodox or unusual ideas without immediately dismissing them.

Discuss, build upon and constructively criticize each other's ideas –in a spirit of cooperative give and take.

Make comments concise to avoid monopolizing the dialogue.

Diversity, Inclusion and No Harassment

Research Corporation for Science Advancement fosters an environment for listening and considering new ideas from a diverse group, with respect for all participants without regard to gender, race, ethnicity, sexual orientation, age or any other aspect of how we identify ourselves other than as fellow scientists.

RCSA does not tolerate any form of harassment, which could include verbal or physical conduct that has the purpose or effect of substantially interfering with anyone else's participation or performance at this conference, or of creating an intimidating, hostile, or offensive environment; any such harassment may result in dismissal from the conference.

Read RCSA's Code of Conduct

From the President

Welcome to the 2022 *Scialog: Advancing BioImaging* meeting, cosponsored by Research Corporation, the Chan Zuckerberg Initiative and the Frederick Gardner Cottrell Foundation. This is the second of three Scialog meetings on this theme, and it is great to see so many people returning. We are thrilled that we can meet face-to-face this year. Take the opportunity to catch up with colleagues you met last year, and to welcome some new Scialog Fellows who are joining us for the first time this year.

The goal of this Scialog is to catalyze the creation of multidisciplinary collaboration to explore new and innovative projects that accelerate fundamental science on advanced imaging techniques that can stimulate new approaches to visualize biological structures and processes with ever-greater clarity and resolution.

Scialog's overarching purpose is to advance cutting-edge science of great significance to humanity by catalyzing innovative, basic research leading to fundamental discoveries. Our focus is on scientists in the early years of their independent careers. Through the unique Scialog process, we seek to lay the foundation for an ongoing, highly creative, cross-disciplinary community of scientists that will prove adept at identifying exciting areas for research advances for decades to come.

To that end, under the guidance of Program Directors **Andrew Feig**, **Richard Wiener** and **Silvia Ronco** (Research Corporation), and with assistance from our initiative partners **Steve Jett**, **Vladimir Ghukasyan**, **Ed McCleskey** and **Stephani Otte** (Chan Zuckerberg Initiative) and **Shaun Kirkpatrick** (Frederick Gardner Cottrell Foundation), we hope you will be engaged in passionate discussions with colleagues, many of whom you will have met for the first time at Scialog. We also welcome a new partnership with the Walder Foundation (represented by **Sandra Laney** and **Antonio Abeyta**) which is providing additional support across all of the biologically related Scialog initiatives this year. The process may even push you out of your comfort zone with the goal of stimulating new and better ideas. The result, we expect, will be a meeting unlike others that you attend. We are confident that you will find the next few days to be extremely worthwhile.

This is your opportunity to air that wild idea you have been reluctant to share with others, or to discuss a nagging hunch that does not yet have sufficient supporting data, or to take a leap on a high-impact/high-risk project instead of concentrating all your effort on somewhat more "incremental" studies. This is the time to come up with, and be open to, completely new ideas that may truly change the world and to find new colleagues and collaborators with whom to pursue them.

We hope this meeting yields a crop of outstanding team proposals, which will make our job of determining who receives funding very challenging. I wish you every success in exploring new and compelling ideas over the next few days.

Have a terrific meeting!

Daniel Linzer
President
Research Corporation for Science Advancement

From the Program Director

Research Corporation's highly interactive Scialog meetings have the goal of catalyzing new collaborations based on blue-sky ideas among Scialog Fellows who constitute a highly select group of exemplary early-career scientists from the U.S. and Canada. The emphasis is on dialogue, networking, and building new collaborations to pursue novel, high-risk discovery research. Scialog: ABI represents our return to hosting face-to-face meetings and we hope that you are as excited as we are to be physically together in Tucson for year two of this event rather than on Zoom.

Research Corporation, Chan Zuckerberg Initiative and Frederick Gardner Cottrell Foundation chose to focus on Advancing BioImaging because we believe this critical area of science will impact the way we understand biology and human health. Gone are the days of just seeing physiological features. Modern imaging crosses spatial and temporal boundaries with the ability to see not just the physical morphology of a cell or piece of tissue, but also chemical and biological pathways taking place within the physical structures. And by combining multiple imaging technology and the ability to design photophysical probes and new hardware, and new algorithms that process data in real time and adjust data collection in response, imaging across wide fields and while stopping to acquire high resolution at the most critical loci is becoming possible. We believe these breakthroughs can be accelerated by bringing together chemists, physicist, biologists, bioengineers and medical imaging specialists to work together collaboratively on novel, high-risk projects.

We have two outstanding speakers: **Brian Pogue** (University of Wisconsin-Madison) and **Jenn Prescher** (University of California, Irvine), to set the stage for breakout discussions.

We also have a team of terrific discussion facilitators: **Agata Exner** (Case Western Reserve University), **Maryellen Giger** (The University of Chicago), **George Langford** (Syracuse University), **Kristen Maitland** (Texas A&M University), **Brian Pogue** (University of Wisconsin-Madison), **Jenn Prescher** (University of California, Irvine), **Brad Smith** (University of Notre Dame), and **Jin Zhang** (University of California, San Diego).

Scialog meetings focus on dialog and team building with the goal of creating novel strategies and collaborative approaches. An important feature is the opportunity for Scialog Fellows to form teams and write proposals to pursue particularly creative ideas that emerge through the dialogue. We hope this competition is exciting, but regardless of which proposals are funded, the primary purpose is to catalyze a deeper and more meaningful exchange of ideas than ordinarily occurs at scientific conferences. Our intent is for this process to help participants gain new insights and connections that significantly advance fundamental science to enable major advances in imaging technologies.

We hope each participant finds the Scialog experience of great value. Please do not hesitate to provide feedback on how to make the conference better. My fellow Program Directors, **Richard Wiener** and **Silvia Ronco**, the RCSA staff, and I are here to help make the meeting a great experience!

Andrew Feig
Senior Program Director
Research Corporation for Science Advancement

Conference Agenda
May 19–22, 2022

Thursday, May 19

2:00 pm	**Registration Opens**	Sonoran Foyer
2:00 – 5:00 pm	**Snacks and Informal Discussions**	Sonoran Foyer
5:00 – 6:30 pm	**Poster Session and Reception**	Santa Catalina Ballroom
6:00 – 6:30 pm	**Meeting for Discussion Facilitators**	Javelina
6:30 – 8:30 pm	**Dinner and Welcome** Dan Linzer, President, RCSA Stephen Jett, Scientific Program Manager, Imaging, CZI **Conference Overview, Outcomes and Proposal Guidelines** Andrew Feig, Senior Program Director, RCSA **Introductions/Ice Breakers**	Sonoran Rooftop Patio
8:30 – 11:00 pm	**Starlight Cafe**	Sonoran Rooftop Patio

Friday, May 20

7:00 – 8:00 am	**Breakfast**	Sonoran Rooftop Patio
8:00 – 8:45 am	**Keynote Presentation** *Contrast Enhancement in Optical Cancer Imaging: Metabolic, Immunologic and Heterogeneity* Brian Pogue, University of Wisconsin-Madison	Sonoran Ballroom
8:45 – 9:00 am	**Breakout Session Overview and Instructions**	Sonoran Ballroom
9:00– 10:15 am	**Breakout Session I**	Mesa, Canyon, Palm, Javelina, Sonoran Ballroom
10:15 – 10:35 am	**Report Out**	Sonoran Ballroom
10:35 – 11:15 am	**Conference Photo and Morning Break**	Stairs Near the Main Pool
11:15 – 11:45 am	**Mini Breakout Session I** (Fellows)	All Spaces
	Facilitator Debrief (Facilitators)	Javelina
11:45 am – 1:00 pm	**Lunch**	Sonoran Rooftop Patio
1:00 – 1:45 pm	**2021 Team Award Panel Discussion**	Sonoran Ballroom
1:45 – 3:00 pm	**Breakout Session II**	Mesa, Canyon, Palm, Javelina, Sonoran Ballroom
3:00 – 3:20 pm	**Report Out**	Sonoran Ballroom
3:20 – 3:50 pm	**Mini Breakout Session II** (Fellows)	All Spaces
3:50 – 5:15 pm	**Afternoon Break**	Sonoran Foyer
5:15 – 6:45 pm	**Poster Session and Reception**	Santa Catalina Ballroom
6:45 – 7:45 pm	**Dinner**	Sonoran Rooftop Patio
7:45 – 8:30 pm	**Keynote Presentation** *Spying on Cellular Communication with Chemical Tools and Noninvasive Imaging* Jenn Prescher, UC Irvine	Sonoran Ballroom
8:30 – 11:00 pm	**Starlight Cafe**	Sonoran Rooftop Patio

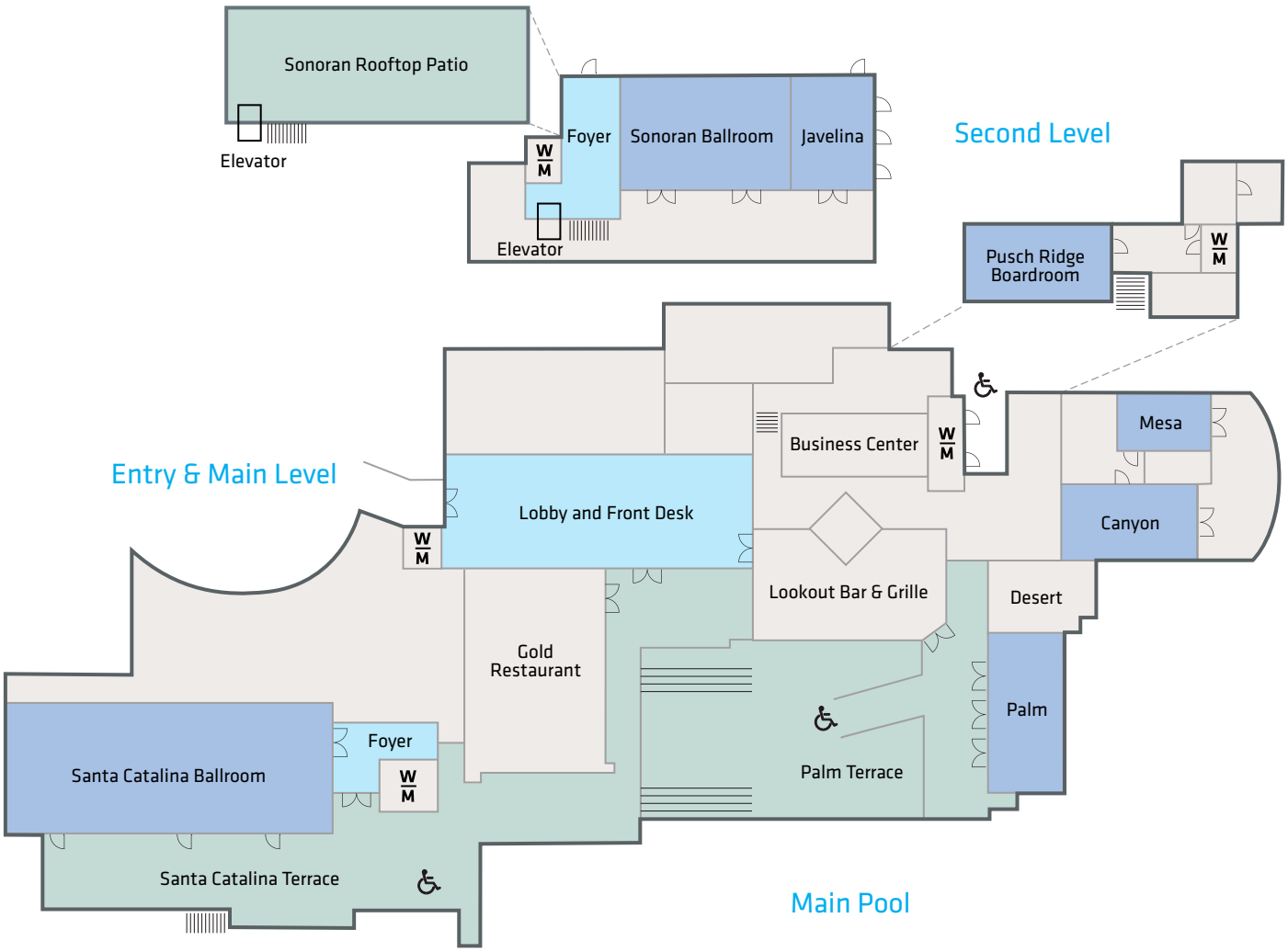
Saturday, May 21

6:45 – 7:30 am	**Optional Guided Nature Walk**	WL Trail–Meet in Lobby
7:00 – 8:00 am	**Breakfast**	Sonoran Rooftop
8:00 – 8:45 am	**2021 Team Award Panel Discussion**	Sonoran Ballroom
8:45 – 9:15 am	**Mini Breakout Session III** (Fellows)	All spaces
9:15 – 9:45 am	**Morning Break**	Sonoran Foyer
9:45 – 11:00 am	**Breakout Session III**	Mesa, Canyon, Santa Catalina, Javelina, Sonoran Ballroom
11:00 – 11:20 am	**Report Out**	Sonoran Ballroom
11:20 – 11:50 am	**Mini Breakout Session IV** (Fellows)	All Spaces
	Facilitator Debrief	Pusch Ridge Boardroom
11:50 – 1:00 pm	**Lunch**	Palm Room/Terrace
1:00 – 6:00 pm	**Team Formation, Informal Discussions and Proposal Writing**	All spaces except Sonoran Ballroom and Rooftop
5:45 – 6:30 pm	**Reception**	Santa Catalina Terrace
6:30 – 7:30 pm	**Dinner**	Palm Room/Terrace
7:30 – 11:00 pm	**Starlight Cafe**	Palm Room/Terrace

Sunday, May 22

6:30 – 7:30 am	**Breakfast**	Palm Room/Terrace
7:30 – 11:00 am	**Presentation of Proposals**	Santa Catalina Ballroom
	Assessment Survey and Wrap-up	
11:00 – 12:00 pm	**Lunch** (available to go)	Santa Catalina Foyer

Westward Look Resort



Keynote Speakers

Contrast Enhancement in Optical Cancer Imaging: Metabolic, Immunologic and Heterogeneity

Brian Pogue
University of Wisconsin-Madison

Abstract: Imaging systems naturally have a defined sensitivity and dynamic range, but the nature of imaging highly heterogenous diseases such as cancer means that the disease itself can partly define the image contrast and approach needed to acquire the image. In this talk, examples of different radiation sources or different structured illumination patterns will be reviewed, to illustrate how the system design can affect what is measured. Imaging can be enhanced by use of contrast agents, an in the area of exogenous molecular agents there is significant growth, but the value of each agent is based upon many factors. The range of molecular targets varies widely with increasing specificity being the goal, and the possible targets being: structural molecules, metabolism driving molecules, immunologic receptors and/or genetic proteins. In many cases of highly specific agents, the value of the added contrast may not be realized unless the imaging system is matched to the task, in terms of available dynamic range, low non-specific background, and specificity for resolving relevant cancer structures. An approach to immunologic targeting of the EGF receptor with a surgical fluorescent contrast agent will be illustrated, as well as an approach to metabolic targeting of hypoxia. Comparing these two illustrates the relative differences in heterogeneity and background that can determine which will be more successful and where. Commercial translation in these areas is now growing and scientific guidance and industry-academic partnerships can help to define the most promising areas for the future.

Spying on Cellular Communication with Chemical Tools and Noninvasive Imaging

Jennifer Prescher
University of California, Irvine

Abstract: Cellular networks drive diverse aspects of human biology. Breakdowns in cell-to-cell communication also underlie numerous pathologies. While cellular interactions play key roles in human health and disease, the mechanisms by which cells transact information in vivo are not completely understood. The number of cells types involved, the timing and location of their interactions, the molecular cues exchanged, and the long-term fates of the cells remain poorly characterized in most cases. This is due, in part, to a lack of tools for observing collections of cells in their native habitats. My group is developing novel imaging probes to "spy" on cells and decipher their communications in vivo. Examples of these probes, along with their application in tissues and whole organisms, will be discussed.

2022 Proposal Guidelines

Scialog: Advancing BioImaging

1. Awards are intended to provide seed funding for teams of two to three Scialog Fellows formed at this conference for high-risk, high-impact projects.

2. The application package should be submitted as a single PDF file. It contains the completed ABI Proposal Coversheet, found in the conference Google drive, as page one. Pages two and three should describe the project and role of each team member. A fourth page may be used for references. No budget is necessary.

3. Awards will be in the amount of $50K direct funding per team member, plus a small percentage for overhead. Grant duration will be one year.

4. No Scialog Fellow can be a member of more than two teams. If a Scialog Fellow is a member of two teams, other members of the teams must be different. No team can submit more than one proposal.

5. No Scialog Fellow who previously has won a Scialog ABI Collaborative Award can be a member of more than one team. The other team members must be different from the members of the previously awarded team (Applies to Years 2 and 3).

6. Teams cannot include members who have previously collaborated with one another. If you are unsure of your status (e.g., prospective team members were part of a large collaboration but did not significantly interact), please check for clarification with an RCSA program director

7. Teams are encouraged (but not required) to:
   a. Include members with different research approaches and methods.
   b. Include members from different disciplines.

8. Proposals must be submitted electronically by **6:30 a.m. PST Sunday, May 22, 2022**. Instructions for submission will be provided at the meeting.

9. Awards are anticipated to start around **August 1, 2022**.

2021 Collaborative Awards

NeedleScope: Developing the Smallest Microscope for BioImaging
Aseema Mohanty, Electrical and Computer Engineering, Tufts University
Sixian You, Electrical Engineering and Computer Science, Massachusetts Institute of Technology

4-D Molecular Tracking Using Kilohertz Framerate Multi-Modal Microscope
Nick Galati, Biology, Western Washington University
Shannon Quinn, Computer Science, University of Georgia
Doug Shepherd, Physics, Arizona State University

Nanophotonic Probes for Ultra-Deep Functional Multiphoton Imaging
Luke Mortensen, Chemical, Materials and Biomedical Engineering, University of Georgia
Aniruddha Ray, Physics and Astronomy, University of Toledo

Light-Sheet Imaging of 3D Bioprinted Islet Organoids Structure and Function
Yevgenia Kozorovitskiy, Neurobiology, Northwestern University
Ping Wang, Radiology, Michigan State University

Enabling Noninvasive Lipid Profiling with Intermodal Deep Learning
Benjamin Bartelle, Biological and Health Systems Engineering, Arizona State University
Ulugbek Kamilov, Computer Science and Engineering and Electrical and Systems Engineering, Washington University in St. Louis
Lu Wei, Chemistry and Chemical Engineering, California Institute of Technology

Chip-scale Light Sheet for High Spatiotemporal Resolution Imaging
Aseema Mohanty, Electrical and Computer Engineering, Tufts University
Srigokul Upadhyayula, Molecular and Cell Biology, University of California, Berkeley

Deep Tissue Photoacoustic Imaging with Degradable Inorganic Nanoparticles
Carolyn Bayer, Biomedical Engineering, Tulane University
Allison Dennis, Biomedical Engineering, Boston University

Machine Learning to Identify Soft Tissue Molecular Signatures
Carolyn Bayer, Biomedical Engineering, Tulane University
Sapun Parekh, Biomedical Engineering, The University of Texas at Austin
Paris Perdikaris, Mechanical Engineering and Applied Mechanics, University of Pennsylvania

Microendoscopy-Guided Diagnosis and Treatment of Early-Stage Ovarian Cancer
Barbara Smith, Biological and Health Systems Engineering, Arizona State University
Bryan Spring, Physics, Northeastern University

Wide-Field, Single-Pixel Fluorescence Imaging with On-Chip Nanophotonics
Lisa Poulikakos, Mechanical and Aerospace Engineering, University of California, San Diego
Douglas Shepherd, Physics, Arizona State University

Scialog Fellows

Shiva Abbaszadeh sabbasza@ucsc.edu
Electrical and Computer Engineering,
University of California, Santa Cruz
I develop novel radiation detectors and imaging instrumentation to improve and advance healthcare.

Josh Brake jbrake@hmc.edu
Engineering, Harvey Mudd College
My research group is focused on building tools to tackle problems in biophotonics with a particular focus on peering deep into tissue with optical wavefront shaping and synergistically combining optical hardware with computation to improve system performance in microscopy.

Kevin Cash kcash@mines.edu
Chemical and Biological Engineering,
Colorado School of Mines
My interests lie at the intersection of imaging and sensing. We develop and use next generation sensors to quantify metabolic dynamics at multiple scales, ranging from the cellular, to the organism, and communities of organisms in biomedical and environmental applications.

Fanny Chapelin fchapelin@uky.edu
Biomedical Engineering, University of Kentucky
Dr. Chapelin's lab develops non-invasive magnetic resonance imaging (MRI) methods to track immune cell migration to foci of inflammation in different pathologies such as transplant rejection, autoimmune diseases and cancer.

Huanyu "Larry" Cheng huanyu.cheng@psu.edu
Engineering Science and Mechanics,
Pennsylvania State University
Creating new soft functional composite materials, developing scalable, low-cost, rapid manufacturing approaches, and exploring novel device designs towards next-generation standalone stretchable sensing platforms for smart soft robotics and biomedicine.

Shwetadwip Chowdhury
shwetadwip.chowdhury@utexas.edu
Electrical and Computer Engineering,
The University of Texas at Austin
Interests are in developing next generation computational imaging technologies for applications in science and medicine.

Mini Das mdas@uh.edu
Physics, University of Houston
Combining optical physics, instrumentation and algorithms for early stage cancer detection and in-vivo deep tissue imaging.

Candace Fleischer ccfleis@emory.edu
Radiology and Imaging Sciences, Biomedical Engineering, Emory University School of Medicine
Developing magnetic resonance-based methods for characterizing metabolism and temperature in the healthy and injured human brain

Rui Gao gaor@uic.edu
Chemistry and Biological Sciences,
University of Illinois Chicago
Dr. Gao's lab is interested in how basic molecular building blocks – such as proteins, lipids, and RNAs – assemble and interact to generate specific biological functions or dysfunctions.

Arnold Hayer arnold.hayer@mcgill.ca
Biology, McGill University
How can collective cellular behavior emerge from coordinated autonomous cellular activities? We use live-cell imaging, biosensors, microfabrication, and computational image analysis to explore the signaling dynamics underlying autonomous and collective cell migration.

Ying Samuel Hu yshu@uic.edu
Chemistry, University of Illinois Chicago
A single-molecule lens to immunity.

Beck Kamilov kamilov@wustl.edu
Computer Science and Engineering,
Washington University in St. Louis
Computational Imaging, Biomedical Imaging, Deep Learning, Optimization. I develop methods for image restoration, image reconstruction, and image analysis.

Scialog Fellows Continued

Katy Keenan kathryn.keenan@nist.gov
Applied Physics Division,
National Institute of Standards and Technology
I am excited about quantitative MRI including multiparametric methods for understanding underlying tissue properties, low field MRI, and validation of MRI methods, including assessing the limits of detection. For example, can MRI detect cellular or sub-cellular changes?

Yevgenia (Genia) Kozorovitskiy
Yevgenia.Kozorovitskiy@northwestern.edu
Northwestern University, Neurobiology
We are a neurobiolgy lab interested in plasticity and neuromodulation in the mammalian brain. We use and develop imaging and molecular methods, in complement with electrophysiological and anatomical approaches.

Dylan McCreedy dmccreedy@bio.tamu.edu
Biology, Texas A&M University
The McCreedy Lab investigates the roles of early inflammation in tissue damage and wound healing following spinal cord injury, as well as new three-dimensional imaging strategies to characterize inflammation and neural circuit damage.

Ryan McGorty rmcgorty@sandiego.edu
Physics and Biophysics, University of San Diego
I am interested in measuring the transport dynamics within crowded environments. My lab works on developing light sheet microscopy methods and image analysis methods.

Luke Mortensen luke.mortensen@uga.edu
Regenerative Bioscience Center and School for Chemical, Materials and Biomedical Engineering,
University of Georgia
We aim to develop optical technologies for fluorescence and label-free nonlinear scattering imaging of tiny sub-cellular features deep in highly scattering tissue to understand the dynamic processes of regeneration and differentiation in living organs like the bone.

Arnab Mukherjee arnabm@ucsb.edu
Chemical Engineering, Biological Engineering,
University of California, Santa Barbara
Repurposing naturally occurring biomolecules to non-invasively image whole cells, intracellular signals, gene expression, and enzymatic activity inside the body.

Abdoulaye Ndao andao@bu.edu
Electrical and Computer Engineering,
Boston University
Combining computational imaging and metasurfaces is a promising avenue toward highly efficient imaging systems and may enable novel imaging capabilities that would not be possible by either modality alone.

Girgis Obaid girgis.obaid@utdallas.edu
Bioengineering, The University of Texas at Dallas
Dr. Girgis Obaid is interested in the intersection between personalized nanoparticles, molecular imaging and optically-activated theranostics for recurrent and resistant cancers.

Sapun H. Parekh sparekh@utexas.edu
Biomedical Engineering,
The University of Texas at Austin
My lab uses chemical microscopy to reveal metabolic and molecular changes in disease. Specifically, we study mechanobiology of cancer, protein aggregation in neurodegeneration, and lipid chemistry in obesity.

Rosario Porras rporrasa@uncc.edu
Physics and Optical Sciences,
University of North Carolina at Charlotte
My research group focuses on polarization-based quantitative phase imaging microscopy and wavefront shaping imaging techniques. We harness the optical properties of smart materials to obtain quantitative 3D information of biological samples with high accuracy and specificity.

Lisa Poulikakos lpoulikakos@eng.ucsd.edu
Mechanical and Aerospace Engineering,
University of California, San Diego
My research develops novel nanophotonic materials with the ability image structural changes in biological matter for clinically-relevant disease diagnosis, assessment and quantitative optical visualization.

Aniruddha Ray aniruddha.ray@utoledo.edu
Physics and Astronomy, University of Toledo
Our research involves development of novel imaging and sensing platforms based on nanotechnology and *photonics for solving complex problems in biomedicine.*

Scialog Fellows Continued

Crystal D. Rogers crdrogers@ucdavis.edu
Anatomy, Physiology, and Cell Biology,
University of California, Davis
Dr. Rogers studies the molecular mechanisms that control cell fate specification, migration, and differentiation during early development using multiple organisms.

Joh Schoeneberg jschoeneberg@ucsd.edu
Pharmacology, University of California, San Diego
My lab is a pioneer in advanced 4D lattice light-sheet microscopy of human stem cell derived organoid systems and the development of machine learning tools to process the vast amounts of data produced in the process.

Mark Sellmyer mark.sellmyer@pennmedicine.upenn.edu
Radiology and Biochemistry and Biophysics,
University of Pennsylvania
Our work is at the interface of chemical biology and molecular imaging.

Doug Shepherd douglas.shepherd@asu.edu
Physics, Arizona State University
My research focus is on developing fast 3D imaging and computational methods to build predictive models on how cell fate specification is regulated at the molecular level.

Lingyan Shi Lingyanshi@ucsd.edu
Bioengineering, University of California, San Diego
Super-resolution multiplex optical imaging of metabolic dynamics, and applications to ageing and disease research.

Seu Sim s.sim@uci.edu
Chemistry, University of California, Irvine
The Sim lab develops soft materials incorporating living functionalities. We are interested in understanding how communities of living cells within materials communicate, behave, and adapt.

Alex Walsh walshaj@tamu.edu
Biomedical Engineering, Texas A&M University
My research interests include optical microscopy, quantitative image analysis, and live-cell imaging. My lab uses label-free fluorescence microscopy to image cellular metabolism for applications in cancer therapy, immunology, and neuroscience.

Ping Wang wangpin4@msu.edu
Radiology, Michigan State University
Image-guided stem cell therapies for diabetes, cancer and cardiovascular diseases.

Heather M. Whitney heather.whitney@wheaton.edu
Physics, Wheaton College
I am interested in the development/validation of robust methods of computer-aided diagnosis, particularly to give full consideration to both the biophysical basis of medical imaging and rigorous machine learning methods.

Stephen Yi stephen.yi@austin.utexas.edu
Biomedical Engineering and Oncology,
The University of Texas at Austin
Dr. Stephen Yi's lab research is at the interface of disease biology and informatics in the modern era of precision medicine. His lab seeks to chart signaling network dynamics and perturbation in disease, and build a quantitative understanding of genotype-phenotype relationships.

Sixian You sixian@mit.edu
Electrical Engineering & Computer Science,
Massachusetts Institute of Technology
Microscopy, Computational imaging, and Biophotonics.

Discussion Facilitators

Agata A. Exner agata.exner@case.edu
Radiology, Case Western Reserve University
My research is at the interface of nanomedicine and biomedical ultrasound with a focus on developing nanobubble-based agents to improve disease detection and treatment.

Maryellen Giger m-giger@uchicago.edu
Radiology / Medical Physics, The University of Chicago
Novel mathematical techniques and computer algorithms for extracting signatures from multi-modality medical images and in understanding the efficacy of such methods in the diagnosis of cancer, COVID-19, and other diseases, i.e., personalized healthcare with big data.

George M. Langford glangfor@syr.edu
Biology, Syracuse University
Super resolution imaging of the actin cytoskeleton in living cells.

Kristen Maitland kmaitland@tamu.edu
Biomedical Engineering, Texas A&M University
My research is focused on development of light-based technologies for applications in medicine and biology, including fiber-based imaging systems, handheld microscopes, volumetric imaging systems, portable spectrometers, and point-of-care devices.

Brian Pogue bpogue@wisc.edu
Medical Physics, University of Wisconsin-Madison
I am interested in the interface between X-ray and optical imaging and therapy, maximizing the strengths of both for deep tissue, clinically translatable, bio sensing in vivo.

Jenn Prescher jpresche@uci.edu
Chemistry, University of California, Irvine
My group develops chemical probes and imaging technologies to spy on cellular communication.

Brad Smith smith.115@nd.edu
Chemistry and Biochemistry, University of Notre Dame
The Smith group is chemistry-based and develops new molecular probes for optical imaging and therapy. Recent research has produced new classes of high performance near-infrared dyes for peptides and antibodies.

Jin Zhang jzhang32@ucsd.edu
Pharmacology, University of California, San Diego
Innovative BioImaging Approaches to Spatiotemporal Regulation of Cell Signaling.

Guests

Arne Bakker abakker@chanzuckerberg.com
Science, Chan Zuckerberg Initiative
Arne and his team host meetings, workshops, and hackathons to increase collaboration and dissemination of knowledge within and between scientific communities, and between those communities and CZI.

Gideon Dunster gideon.dunster@alleninstitute.org
Cell Science, Allen Institute
Using cutting edge imaging techniques to view live growth and division in genetically altered hiPSCs.

Daren Ginete dginete@sciphil.org
Science Philanthropy Alliance

Stephen Jett sjett@chanzuckerberg.com
Imaging, Chan Zuckerberg Initiative
I'm the Program Manager for CZI's Imaging Frontiers programs, supporting scientists working on new imaging methods to help cure, prevent and manage all diseases by the end of the century.

Shaun Kirkpatrick skirkpatrick@rctech.com
Frederick Gardner Cottrell Foundation

Mary O'Reilly moreilly@flinn.org
Bioscience, Flinn Foundation
The Flinn Foundation is broadly interested in basic and applied bioscience/life science-related research. Key team member must be Arizona-based.

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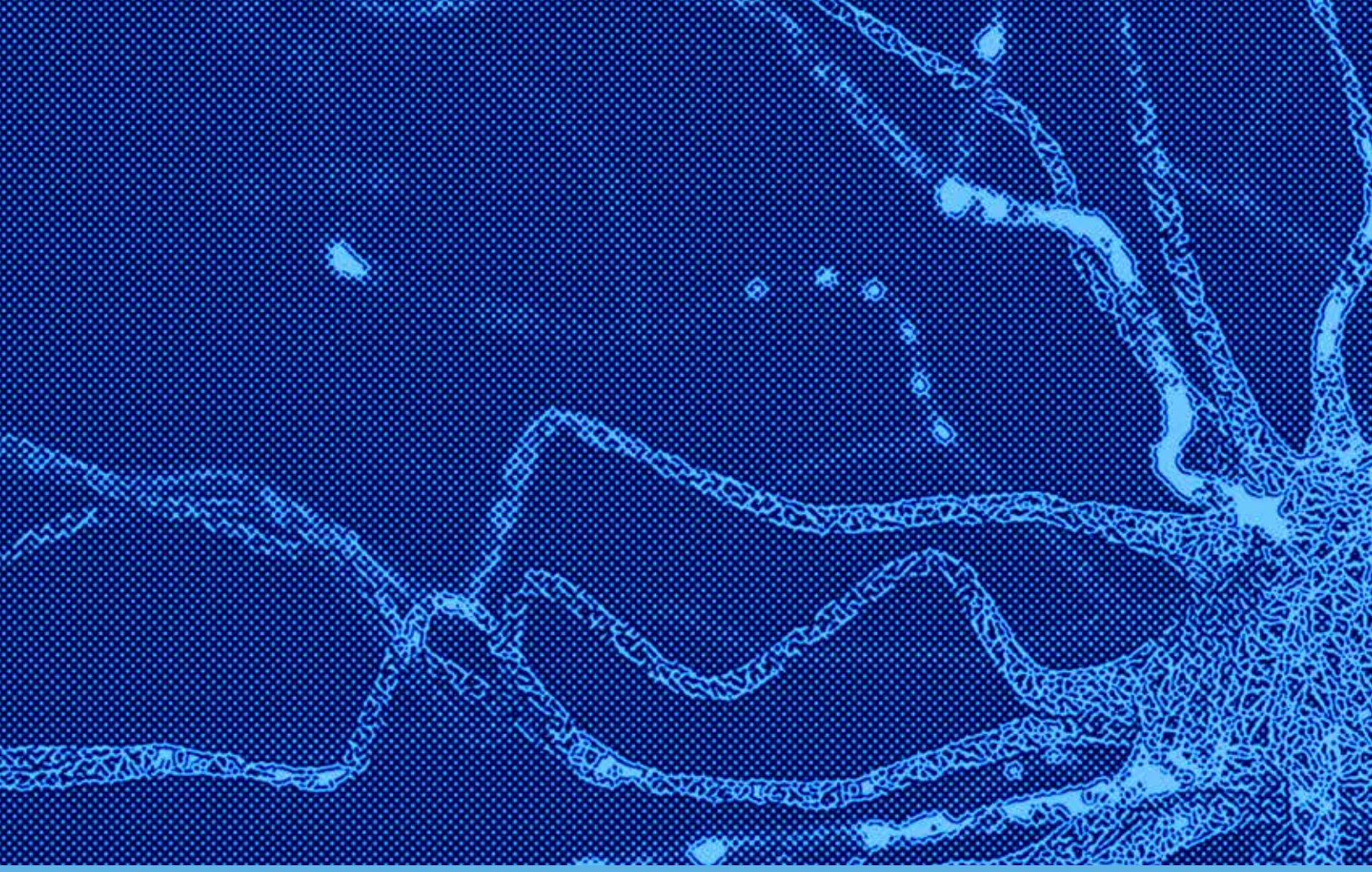

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