GOALI: Grant Opportunities for Academic Liaison with Industry

Kelsey Cook, Chemical Measurement and Imaging (kcook@nsf.gov)
Ken Moloy, Chemical Catalysis (kmoloy@nsf.gov)

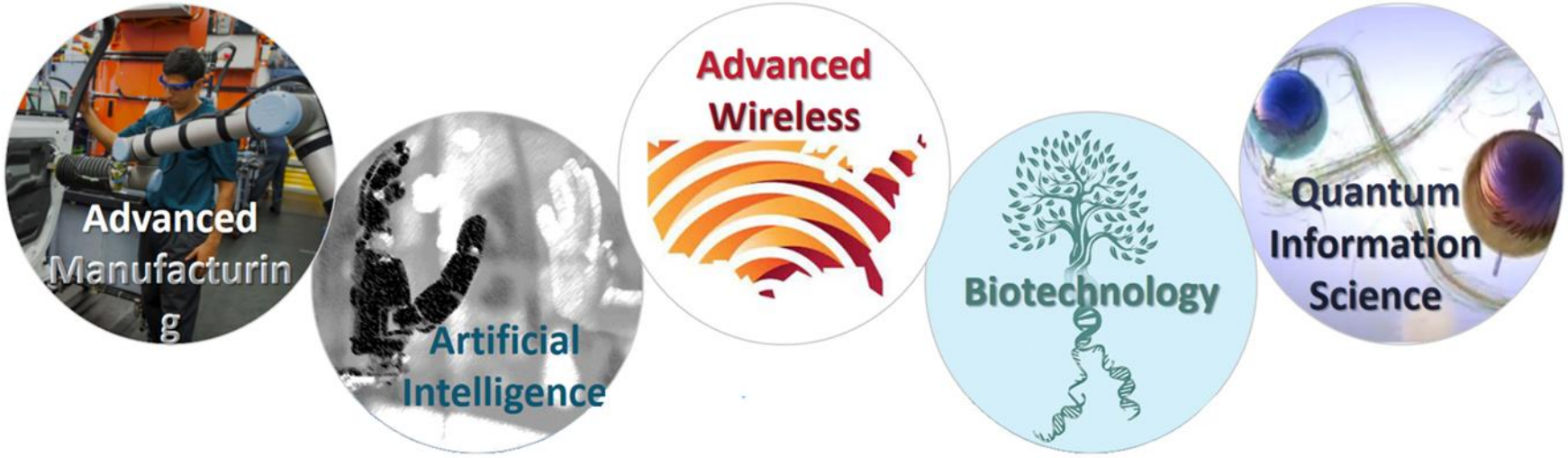
Please mute your microphone!

Submit questions through the chat feature.

Industries of the Future

"The Industries of the Future are cross-cutting, convergent, and independent fields of research that collectively offer enormous economic potential and are critical to the Nation's long-term economic and national security."

(Former) NSF Director France Córdova



Industrial Innovation and Partnerships Programs

- SBIR/STTR: Supports startups and small businesses in the creation of deep technologies, getting discoveries out of the lab and into the market.
- I/UCRC: Catalyzes breakthrough pre-competitive research by enabling close and sustained engagement between industry innovators, world-class academic teams, and government agencies.
- PFI: Support to perform translational research and technology development, catalyze partnerships, and accelerate the transition of discoveries from the laboratory to the marketplace for societal benefit.
- i-Corps: Experiential learning of customer and industry discovery, coupled with first-hand investigation of industrial processes, to quickly assess the translational potential of inventions.

https://www.nsf.gov/funding/programs.jsp?org=IIP

Engineering (ENG)

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Grant Opportunities for Academic Liaison with Industry (GOALI) Proposal

GOALI is a type of proposal that seeks to stimulate collaboration between academic research institutions and industry. Under this proposal type, academic scientists and engineers request funding either in conjunction with a regular proposal submitted to a standing National Science Foundation (NSF) program or as a supplemental funding request to an existing NSF-funded award.

GOALI is not a separate program; GOALI proposals must be submitted to an active NSF funding opportunity and must be submitted in accordance with the deadlines specified therein. A proposer interested in submitting a GOALI proposal or a GOALI supplemental funding request to an existing NSF-funded award must contact the cognizant NSF Program Officer listed in the relevant funding opportunity prior to submission.

Special interest is focused on affording opportunities for:

- Interdisciplinary university-industry teams to conduct collaborative research projects, in which the industry research participant provides critical research expertise, without which the likelihood for success of the project would be diminished;
- Faculty, postdoctoral fellows, and students to conduct research and gain experience in an industrial setting; and
- Industrial scientists and engineers to bring industry's perspective and integrative skills to academe.

GOALI proposals should focus on research that addresses shared interests by academic researchers and industrial partners. The

https://www.nsf.gov/eng/iip/goali.jsp

- Research should be fundamental, transformative, and beneficial to industry
- Regular proposals and supplements
- Synergy:
  - Industrial co-PI (on the Cover Sheet) provides critical research expertise
  - Faculty, postdocs, and students gain experience in an industrial setting
  - Industrial partner brings industry's perspective and skills to academe
- NSF funds are not permitted to be used to support the industrial research partner.
- The title should start with "GOALI:"
- Letter confirming industry co-PI participation must be submitted with the proposal
- Signed IP agreement required before award

https://www.nsf.gov/pubs/policydocs/pappg20_1/pappg_2.jsp#IIE4

Division of Chemistry Due Dates – FY 2021

Contact cognizant program officer for any questions on proposal fit.

September 1, 2020 - September 30, 2020

- Chemical Catalysis (Ken Moloy; kmoloy@nsf.gov)
- Chemical Structure, Dynamics & Mechanisms-A (Colby Foss; cfoss@nsf.gov)
- Chemical Structure, Dynamics & Mechanisms-B (Tingyu Li; tli@nsf.gov)
- Chemical Theory, Models & Computational Methods (Richard Dawes; rdawes@nsf.gov)
- Chemical Synthesis (Jin Cha; jcha@nsf.gov)

October 1, 2020 - November 2, 2020

- Chemical Measurement & Imaging (Kelsey Cook kcook@nsf.gov)
- Chemistry of Life Processes (Catalina Achim; cachim@nsf.gov)
- Environmental Chemical Sciences (Anne-Marie Schmoltner; aschmolt@nsf.gov)
- Macromolecular, Supramolecular & Nanochemistry (Suk-Wah Tam-Chang; stamchan@nsf.gov)

Submission Guidelines: Chemistry Disciplinary Research Programs: NSF 20-577; NSF PAPPG: NSF 20-1

National Science Foundation (US) | https://www.nsf.gov/awardsearch/advancedSearch.jsp

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Awardee Information

- Principal Investigator First Name
- Principal Investigator Last Name
- Include Co-Principal Investigator in name search
- Organization
- State: Select one
- Zip Code
- Country: Select one

Program Information

- NSF Organization: CHE - Division Of Chemistry
- Element Code: Any / All
- Reference Code: Any / All

HINT: The "Program" box searches both program element and program reference names and codes.

- Program
- Program Officer

Additional Information

- Keyword: GOALI

HINT: The Keyword field searches on the title and abstract only.

- Search Award Title Only

HINT: Data prior to 1976 may be less complete.

- Active Awards
- Expired Awards
- Original Award Date: Select one — From — To

[Link](#) to Search Results

Active CHE GOALIs

Program	# Active GOALIs
Chemical Catalysis	6
Chemical Measurement & Imaging	10
Chemical Structure, Dynamics, & Mechanisms	1
Chemical Synthesis	1
Environmental Chemical Sciences	3
Macromolecular, Supramolecular, & Nanochemistry	3
TOTAL	24 (~$11.4 M)

Sample CHE GOALI Awards

PI	Institution	ID	Title
Paul Chirik Rebecca Ruck Danielle Schultz	Princeton U. Merck & Co., Inc. Merck & Co., Inc.	1855719 (CAT)	GOALI: An Industrial-Academic Collaboration for Sustainable Catalysis with Earth Abundant Metals
J. Ilja Siepmann Mark Schure Stephanie Schuster	U. Minnesota Kroungold Analytical, Inc. Advanced Materials Technology, Inc.	2003246 (CMI)	GOALI: CDS&E: Computationally-Guided Development of Chromatographic Phases with Improved Retention Characteristics and of Sustainable Mobile Phases
Rabi Musah Liang T. Chu Robert “Chip” Cody	SUNY – Albany SUNY – Albany JEOL USA, Inc.	1710221 (ECS)	GOALI: Plant-derived Biogenic Sulfur Emissions to the Environment

GOALI: CDS&E: Computationally-Guided Development of Chromatographic Phases with Improved Retention Characteristics and of Sustainable Mobile Phases
CHE-2003246 9/1/2020 – 8/31/2023

J. Ilja Siepmann (PI)
University of Minnesota

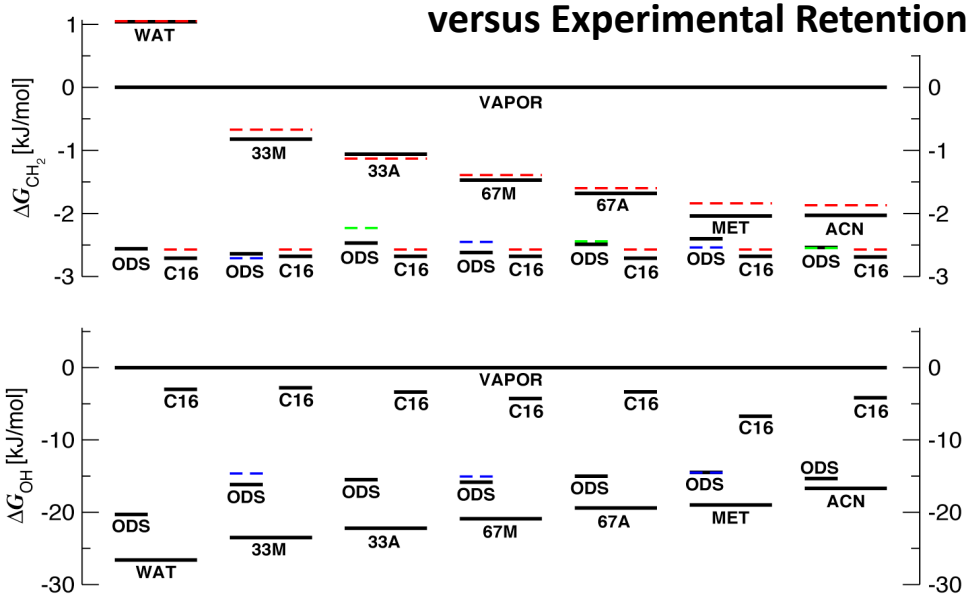
Mark R. Schure (co-PI)
Kroungold Analytical
(formerly at Rohm & Haas
and at Dow Chemical)

Stephanie A. Schuster (co-PI)
Advanced Materials Technology

31 co-authored publications
971 citations
h-index = 19

Siepmann & Schure, U of MN & Dow Chemical, 1152998
GOALI: Collaborative Research: Development and Application of Monte Carlo Simulation Tools for HILIC, Ion Chromatography, and SERS Chemosensors

Validation of Incremental Transfer Free Energies versus Experimental Retention Data



ODS = **d**imethyl octadecyl-silane with coverage of 2.9 μmol/m^2 and no endcapping

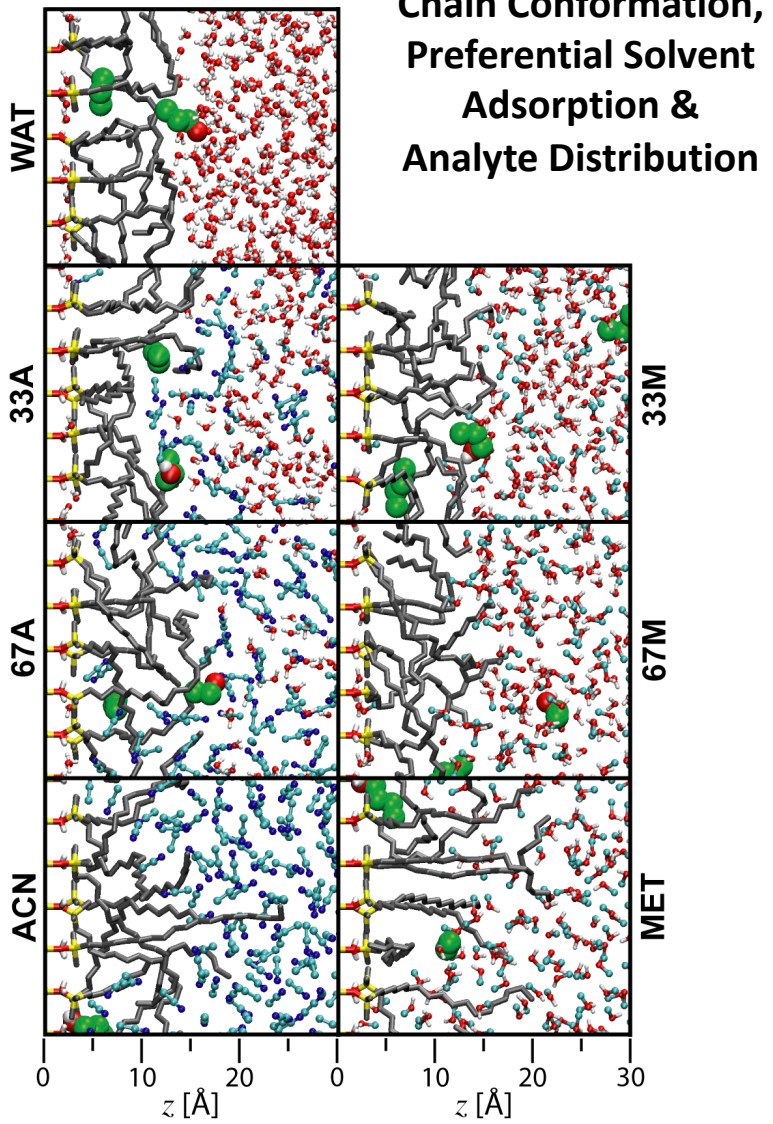
C16 = *n*-hexadecane phase (saturated for simulations)

R.P.J. Ratunga and P.W. Carr, *Anal. Chem.* **72**, 5679 (2000)

B.N. Barman, Ph.D. Thesis (Georgetown U, 1985)

A. Alvarez-Zepeda, Ph.D. Thesis (Georgetown U, 1991)

Chain Conformation, Preferential Solvent Adsorption & Analyte Distribution



Project Outcome – Monte Carlo simulations using efficient sampling algorithms and accurate force fields yield excellent agreement with experimental retention data and provide molecular-level understanding of the complex retention mechanism for different mobile-phase compositions

Impact & Benefits – Knowledge of the retention mechanism allows for the design of stationary phases with improved separation characteristics

Molecular simulation studies of reversed-phase liquid chromatography [Editor's Choice] Rebecca Lindsey, Jake Rafferty, Becky Eggimann, JIS & MRS, *J. Chromatogr. A* **1287**, 60 (2013)

Personal Opinions Informed by GOALIs with 6 Different Co-PIs/Industrial Partners

- co-PI who is TRULY interested in advancing the fundamental science area (contacts made at scientific conferences and visits to university/industry)
- co-PI who is TRULY engaged in developing the proposal/project and in mentoring graduate students
- industrial partner performs experiments/simulations that are essential for project (these in-kind contributions are more important for the GOALI's success than financial support from industrial partner)
- co-PI and industrial partner willing to host graduate students for extended visits
- industrial partner onboard with publications resulting from pre-competitive research (share your institution's standard intellectual property agreement with industrial partner before starting the proposal)
- NSF GOALIs are different from more applied projects (e.g., ARPA-E, RAPID) that involve milestones

NSF CHE Office Hour—GOALI; August 7th, 2020

Featured Project: Plant-derived Biogenic Sulfur Emissions and the Environment

NSF Award Number: CHE 1710221; 8/1/2017-7/31/21

Industrial Partner: JEOL USA Inc., Peabody, MA

Dr. A. John Dane
Dr. Robert B. Cody

Major developer and manufacturer of scientific instruments:

Mass spectrometers; NMR instruments, X-ray fluorescence; electron microscopes and other scientific instruments, industrial and medical equipment.

Dr. Robert Cody—Co-inventor of the DART ion source

University Partner: Professor Rabi A. Musah

Deliverables: 1. Expansion of the sphere of known volatile organosulfur compounds (VOSCs) emitted to the atmosphere by vascular plants; 2. Kinetics information on the reactions of VOSCs with environmentally relevant free radicals; 3. Applications protocols for identification of VOSC emissions into the environment; 4. Ambient air analysis platforms that permit real-time analysis of low level VOSCs in air

Why GOALI? The needs of both partners are complementary and can be seamlessly integrated!

Benefits to Academic Partner

- Advancing the frontiers of science—New methods and/or instrument development; joint IP development
- Investigations of new and/or high-risk ideas
- Emergence of new research areas
- Dramatic enhancement in research productivity
- Access to a range of state-of-the-art equipment and technical expertise
- Joint project results dissemination efforts
- Rapid problem solving and resolution of research challenges and questions
- Exposure of project trainees to excellent training, intellectual property considerations and employment opportunities
- Extension and enhancement of Chemistry Department infrastructure
- Free flow of information

Nature of the interaction: Close proximity; full access to human resource expertise and equipment; overlapping interests

Benefits to Industrial Partner

- Greater insights into the needs of researchers that can drive product development
- Advancing the frontiers of science—New methods and/or instrument development; joint IP development
- Development of application notes
- Joint project results dissemination efforts—Enables the company to remain relevant and at the forefront; advertises the capabilities of the industrial partner while advancing science
- Training, access to and vetting of potential employees
- Sales!
- Free flow of information and access to assistance with customers

Kelsey Cook
kcook@nsf.gov
703-292-7490

Ken Moloy
kmoloy@nsf.gov
703-292-8441

Upcoming CHE Office Hours/Webinars

ACS Virtual Meeting: August 17 – 20

Booth: August 17 – 18, noon – 4 PM ET

Fed Funders Town Hall: August 19, noon – 1:30 PM ET

“Speed Coaching”: August 19, 2 – 5 PM; August 20, noon – 4 PM ET

Submit general office hour questions/suggestions to:
chemhighlights@nsf.gov

Send requests to be included in our Chemistry Communications to:
chem-comm@listserv.nsf.gov