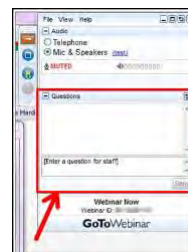




Have Questions?



Type them into questions box!

“Why am I muted?”

Don't worry. Everyone is muted except the presenter and host. Thank you and enjoy the show.

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1

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From renewable fuels to creating the materials for the technology of tomorrow, chemistry plays a pivotal role in advancing our world. Meet the chemists that are building a better world and see how their science is making it happen.

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Why does food taste better when it is grilled or what molecular compounds make a great wine? Discover the delectable science of your favorite food and drink and don't forget to come back for a second helping.

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Feeling burdened by all that molecular weight? Listen to experts expound on the amazing side of current hot science topics. Discover the chemistry of rockets, how viruses have affected human history, or the molecular breakdown of a hangover.

Business & Entrepreneurship

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<https://www.acs.org/content/acs/en/acs-webinars/videos.html>

2



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7



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8

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Engaging you to reimagine chemistry and engineering for a sustainable future.

We believe sustainable and green chemistry innovation holds the key to solving most environmental and human health issues facing our world today.

- Advancing Science
- Advocating for Education
- Accelerating Industry



www.acs.org/gci

9

CAS: Where Science and Strategy Converge

The screenshot shows the CAS Blog interface. At the top left is the CAS logo (A Division of the American Chemical Society). Navigation links include SOLUTIONS, RESOURCES, CAS DATA, and ABOUT. A search icon and a LOGIN button are on the right. The main content area features an article titled "Can plastic eating super-enzymes solve our destructive plastic problem?" dated MARCH 5. The article text begins: "The production of cheap, durable and adaptable plastics has exploded in the last few decades as they infiltrate every part of our lives; but this once desirable polymer has a dark side. Plastics may take hundreds of years to degrade and with production at astronomical levels (globally over 350 million tons each year), plastic pollution is one of the most pressing environmental concerns facing the world today." The author is identified as RUMIANA TENCHOV, Information Scientist, CAS. A SUBSCRIBE button is visible, along with a section for FEATURED ARTICLES dated JULY 6.

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- Search Examples from Green or Sustainable Chemistry
- One hour webinar with experienced CAS experts including Q&A
- Pick from two options on Friday, September 10:
 - **5 AM EDT (11 AM CEST)** <https://bit.ly/SciFinderTraining1>
 - **9 AM EDT (3 PM CEST)** <https://bit.ly/SciFinderTraining2>



German Young Chemists' Network

JungChemikerForum (JCF) of the Gesellschaft Deutscher Chemiker (GDCh)



- Personal & Professional Development for Young Chemists
- Modern Impulses for the Future of Chemistry & Chemical Societies
- Chemistry Outreach & Cooperation for the Benefit of Society

JCF Sustainability Team

Young Partners



YOUNG CHEMISTS' SUSTAINABILITY GUIDELINES
IT'S THAT EASY!

ADVERTISING	EVENTS	SHARE
Use green media wisely	Develop locally and regionally classics	Sustainability contents in your publications, newsletters and networks
Print responsibly and with low carbon footprint	Bring your own cup	Use your social networking

Sustainability in Chemical Education
A Global Young Chemists' Survey

Be part of the global survey to shape the future of education.
Help pave the way for a globally sustainable future.
Take the survey in less than 5 minutes here:
<https://forms.gle/4FVt8R6g2Nq76> Deadline: 30th July 2020

Logos: EuChemS, GDCh, JCF, IYCN

Sustainability in Education

Empowering Chemists to Act

Emel Dobbelaar Chair of German Young Chemists' Network @emel123	Nasalia O'Neil English Lecturer Student Manager @nasalia	Juliana Vidal Director of Learning and Certification @jvidal	David Cole-Hamilton Emeritus Professor @davidcoleham	Florian Engels Chairman @florianengels
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January 28, 2021
3:00 - 4:30 PM (CET)
http://bit.ly/Sus_in_Edu

Logos: EuChemS, IYCN, GDCh, JCF



The European Young Chemists' Network



- Diverse team representing 35,000+ early-career chemists from 28 countries
- Members of the national chemical societies are automatically members of EuChemS and the EYCN!
- **Projects:** Workshops, Webinars, Photography and Video Contests, Awards, Podcast, European Young Chemists Meeting, Interviews, Information on studying and working in Europe, Science Policy and much more ...



EYCN Podcast
Chemistry To Your Ears
www.eycn.eu/podcast

Chemistry Rediscovered
Sir Geoffrey Wilkinson EYCN Video Competition

Topic:
Safety in Chemistry

Deadline:
30th of September 2021

www.eycn.eu/cr2021

Webinars

*Sustainability
Science Communication
Career Development
Grant Writing
and more*

www.eycn.eu/youtube

The Green Evolution Webinar, 9th September 2021

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Advancing Polymer Science with Organic Catalysts

Date: Wednesday, September 15, 2021 @ 2-3:30pm ET
Speakers: Andrew Dove, University of Birmingham, UK and Robert Waymouth, Stanford University
Moderator: Rachel Letteri, University of Virginia

[Register for Free!](#)

What You Will Learn:

- Application of organic catalysts for stereocontrolled step growth polymerization
- Development of high temperature organic catalysts for polymerization and depolymerization
- Using organic catalysts to selectively depolymerize plastic mixtures
- New designs for ultrafast organocatalytic polymerization reactions
- Synergies between continuous flow chemistry and rapid organocatalytic polymerization reactions
- New catalysts enabling the design of emerging functional materials for gene delivery

Co-produced with: ACS Division of Polymer Chemistry

Designing Around Structural Alerts in Drug Discovery

Date: Friday, September 17, 2021 @ 2-3:15pm ET
Speaker: Nick Meanwell, Bristol-Myers Squibb
Moderator: Deepak Dalvie, Crinetics Pharmaceuticals

[Register for Free!](#)

What You Will Learn:

- The identity of structural alerts that have been associated with problems in drug discovery and development
- The fundamental mechanistic organic chemistry subtending structural alerts that are subject to bioactivation
- Strategies and tactics to design around structural alerts

Co-produced with: ACS Division of Medicinal Chemistry, American Association of Pharmaceutical Scientists, and ACS Publications

Service Dogs in Your Chemistry Lab

Date: Wednesday, September 22, 2021 @ 2-3pm ET
Speakers: Patricia Redden, Saint Peter's University / Joey Ramp, Empower Ability Consulting, LLC / Ashley Neybert, Independence Science
Moderator: Partha Basu, Indiana University-Purdue University Indianapolis




[Register for Free!](#)

What You Will Learn:

- What does the Americans with Disabilities Act cover regarding access rights for service dogs
- How is a service dog selected for certain jobs or disabilities, and what type of training is required
- What types of service dogs exist and what is the process to obtain one

Co-produced with: Chemists with Disabilities (CWD) Committee, ACS Department of Diversity Programs, and ACS Diversity, Inclusion & Respect Advisory Board


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ACS Green Chemistry Institute ACS on Campus

The Green Evolution

Sustainable Chemistry in Global Scholarly Education




FREE Webinar | **TODAY** at **11am ET**



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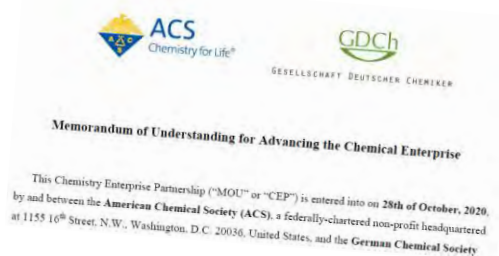
15



GERMAN CHEMICAL SOCIETY

Welcome! Willkommen!

*Webinar presented within the
ACS-GDCh co-operation agreement*



Picture: Christian Dorn/Praxity

September 9, 2021

www.gdch.de



The Green Evolution: Sustainable Chemistry in Global Scholarly Education



MARY KIRCHHOFF
Executive Vice President of Scientific
Advancement, American Chemical Society



H.N. CHENG
2021 ACS President and Research Chemist,
US Department of Agriculture



FRANK ROSCHANGAR
Highly Distinguished Research Fellow,
Boehringer-Ingelheim and co-chair,
ACS Pharmaceutical Roundtable



KLAUS KÜMMERER
Director, Institute of Sustainable and Environmental
Chemistry and Chair of Sustainable Chemistry and
Material Resources, Leuphana University Lüneburg

Presentation slides are available now! The edited recording will be made available as soon as possible.

www.acs.org/acswebinars

This ACS Webinar is co-produced with ACS on Campus, ACS Green Chemistry Institute, CAS, and German Chemical Society.

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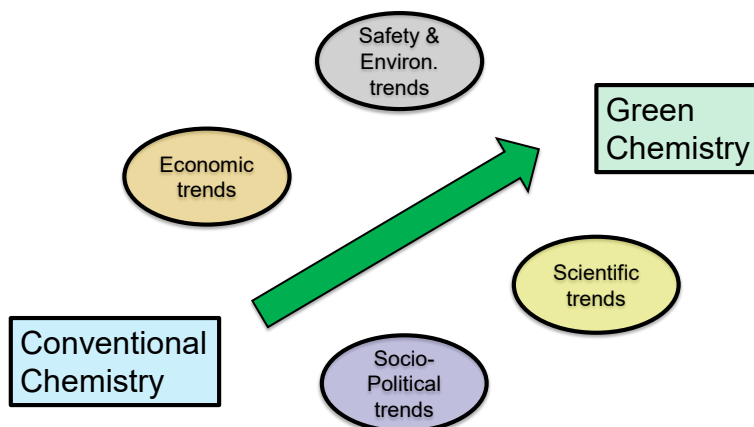
American Chemical Society



Green Chemistry – The Next Evolution of Chemistry Research

H. N. Cheng
September 9, 2021

Evolutionary Scheme



Sustainability and Green Chemistry



- Sustainable development is meeting the needs of the present without compromising the ability of future generations to meet their own needs.
 - United Nations in 2015 adopted 17 Sustainable Development Goals (SDGs), trying to end poverty, protect the planet, and promote peace and prosperity
- Green chemistry is the design of chemical products and processes that reduce or eliminate the use and generation of hazardous substances.

Audience Survey Question

ANSWER THE QUESTION ON BLUE SCREEN IN ONE MOMENT



In a global survey of 27,000 representatives from politics, business, science, and research in 2018-2019, **what percentage of them is aware of the UN's Sustainable Development Goals?**

- Over three quarters (70%)
- About half (50%)
- About a quarter (25%)
- About a tenth (10%)
- About a twentieth (5%)



https://www.globalsurvey-sdgs.com/wp-content/uploads/2020/01/20200205_SC_Global_Survey_Result-Report_english_final.pdf

21

Economic Trends



- **Commoditization of chemical products**
 - Price pressure. Profit challenge.
 - New products needed to complement current products
- **Competitiveness of chemical products**
 - Product parity. Erosion of competitive advantages
 - Green technology may provide a new competitive edge
- **Feedstock supply**
 - Most current raw materials from petroleum sources. Supply/demand
 - Biobased materials represent sustainable and degradable alternatives
- **Corporate advantages**
 - Green chemistry can increase process efficiency, reduce waste, enhance safety, attract talent, and create new business opportunities
 - Green products may provide greater sales for some applications

Safety and Environmental Trends



- **Health and safety**
 - Negative publicity about chemicals and their effects on health and safety
- **Environmental stewardship**
 - Pollution of air and water
 - Disposal problem. Used/waste products. “Microplastics.”
- **Improved analytical instrumentation**
 - Increased sensitivity of detection of lower levels of contaminants
- **Regulatory agencies in many countries and regions have tightened their regulations relating to chemicals**
- **Green chemistry can provide safer and more eco-friendly products and processes**
 - A good way to counter the negative image of “chemicals.”

Socio-Political Trends



Increasing international acceptance of sustainability as a useful and needed development - UN Sustainable Development Goals



Chemistry's Role in the SDGs



- Chemistry, with its broad reach into technology, the economy, human health, and security, has a part to play in all SDGs
- Seven SDGs are seen as being particularly strategic and relevant to the chemistry community



25

Support for Sustainable Green Chemistry



The sustainability/green chemistry concept is catching on:

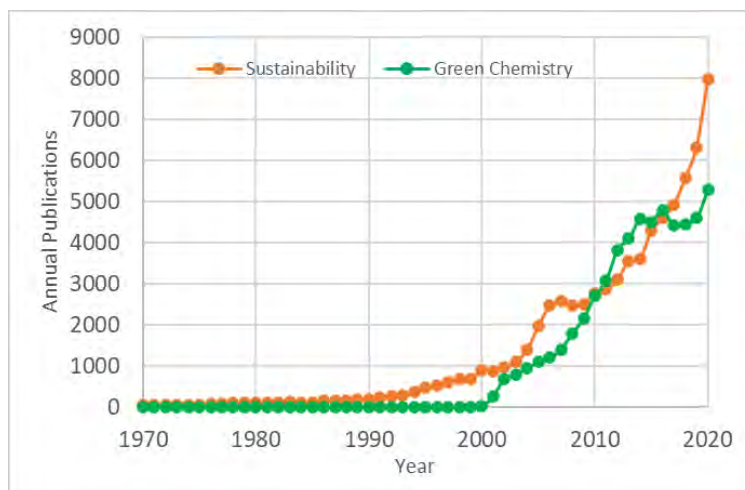
- U.S. House of Representative (2019) and Senate (2020) passed a bill to direct the White House Office of Science and Technology Policy to support sustainable chemistry and develop road map
- Active R&D is on-going in academia, industry, and government labs
- P&G unveiled sustainability goals, making the packaging of its top 20 brands 100% recyclable or reusable (4/22/18)
- DuPont announced its 2030 Sustainability Goals, including 9 goals relating to innovation, operations, and inclusivity (10/30/2019)
- Unilever will source 100% of its cleaning and laundry product formulations with renewable or recycled carbon (2/9/2020)
- Several other companies have also announced their plans for sustainable products or processes

Scientific Trends



- **Some chemical fields are mature**
 - The knowledge of synthesis and analysis is generally known
 - Chemistry professionals and students can be trained to do them
 - Many segments of chemical industry are mature
 - Examples are commodity industrial chemicals, fertilizers, paints, textiles, etc.
- **Some chemical fields are promising or emerging (“new frontiers”)**
 - Nanotechnology and biotechnology affords further opportunities for chemistry
 - Other areas include energy storage, catalysis, self-assembly, sensors, organic electronics, quantum computing, *sustainability/green chemistry*
- **Multidisciplinarity**
 - Many advances are being made at the interface between chemistry and other disciplines, such as biology, medicine, physics, nanotechnology, and computer technology.
 - *Sustainability* is a good example of the need for multidisciplinary approaches
- **New applications of chemical skills**
 - Examples include the grand challenges today (such as *sustainability*, energy, clean air and water, food, population, climate change, diseases)

Sustainability Publications



Number of papers including “sustainable”, “sustainability”, or “Green Chemistry” in the title or abstract. Thanks to Matt McBride of CAS for supplying the data, 9/1/21.

Conclusions



- **Sustainability/green chemistry represent the next evolution of chemistry research:**
 - The economic, socio-political, and environmental trends all favor them
 - They are compatible with the current scientific trends
 - New Frontiers (promising and emerging)
 - Multidisciplinary R&D
 - New applications of chemistry skills
 - **They represent a great opportunity for the future**
 - Re-shape chemistry's image
 - Work in an up-and-coming and interesting scientific area
 - Apply our creativity and ability to open up new avenues
 - Contribute towards a better world tomorrow
-

Audience Survey Question

ANSWER THE QUESTION ON BLUE SCREEN IN ONE MOMENT



How much average waste, per kg API, is co-generated during production of a commercial small molecule API, starting from commodity-type starting materials?

- 17 kg
- 99 kg
- 182 kg
- 1430 kg



Green Chemistry in Scholarly Education in Germany & Globally

Value Through Green Chemistry in the Pharmaceutical Industry

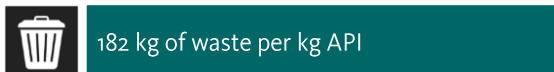
Frank Roschangar, PhD, MBA
ACS Webinar • September 9, 2021



About Sustainable Drug Development

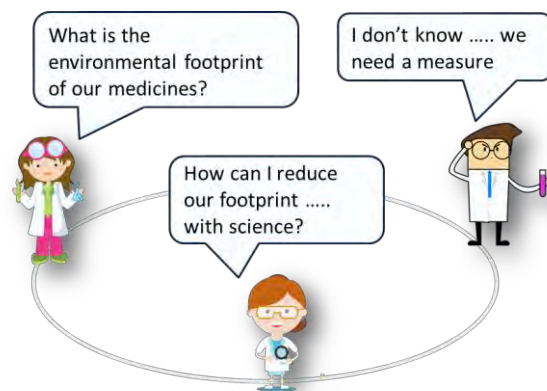


Footprint of Pharmaceuticals*



* Based on iGAL-aligned Gate-to-Gate assessment of 29 commercial small molecule APIs: *ACS Sustainable Chem. Eng.* 2021, ASAP. DOI: 10.1021/acssuschemeng.1c01940 (Open Access)

We are committed to meet the needs of patients around the world while **substantially reducing our environmental footprint!**



How can Green Chemistry tie into a Corporate Sustainability Strategy?



Waste Hierarchy of the Circular Economy

ECO-DESIGN

- Designing for Recoverability/Recyclability
- Designing for Reuse
- Designing for Energy Efficiency
- Packaging Minimization
- Life Cycle Thinking
- Material Safety
- Green Chemistry

+

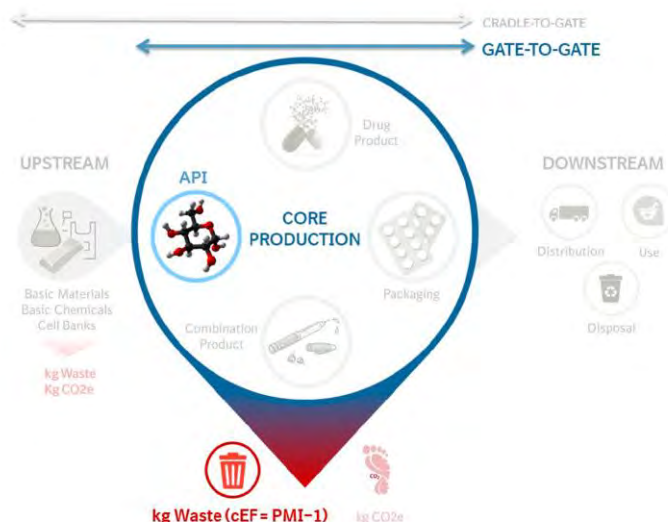
GREEN CHEMISTRY *

1. Prevent waste
2. Atom Economy
3. Less Hazardous Synthesis
4. Design Benign Chemicals
5. Benign Solvents & Auxiliaries
6. Design for Energy Efficiency
7. Use of Renewable Feedstocks
8. Reduce Derivatives
9. Catalysis (vs. Stoichiometric)
10. Design for Degradation
11. Real-Time Analysis for Pollution Prevention
12. Inherently Benign Chemistry for Accident Prevention

At BI, we intend to move towards a circular economy by incorporating the design principles of (1) Design for the Environment (Eco-design) and (2) Green Chemistry into the R&D of all pipeline medicines.

* 12 Principles of Green Chemistry: Anastas, P. T.; Warner, J. C. Green Chemistry: Theory and Practice, Oxford University Press: New York, 1998, p.30.

Understanding a Medicine's Life Cycle



ACS Sustainable Chem. Eng 2021, ASAP. DOI: 10.1021/acssuschemeng.1c01940 (Open Access)

How can Metrics Enable Green Chemistry?



Sustainable Development For Generations



Enable Eco-Design

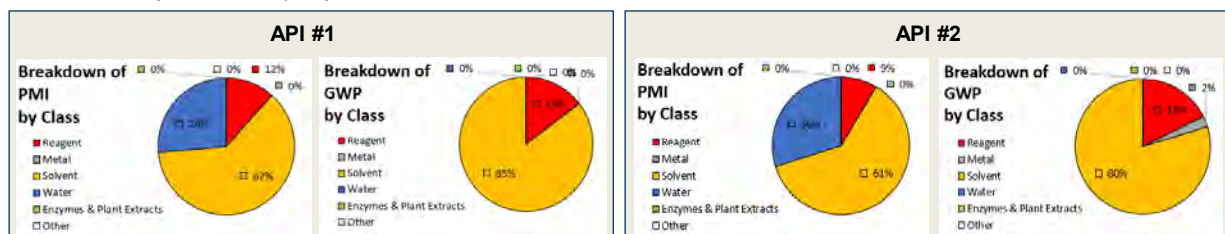
- we can identify major contributors to the environmental footprint of a product
- we can compare alternatives (materials, unit operations and processes) to help make eco-friendly development decisions and identify opportunities to apply sustainable sciences, technologies and strategies



Key Sustainable Technologies

Biocatalysis
Continuous Flow Chemistry
Solvents / Recycling
Artificial Intelligence

Case study of identifying environmental hot spots for two commercial APIs *



Solvents contribute the most to the footprint → focus on solvent selection and on decreasing solvent use

* Cradle-to-Gate data obtained with PMI-LCA Tool from the ACS GCI Pharmaceutical Roundtable

How Green is your Green Chemistry? iGAL 2.0 *



Sustainable Development For Generations



<https://www.acsgcipr.org/tools-for-innovation-in-chemistry/green-chemistry-innovation-scorecard-calculator-igal/>

reports % Relative Process Greenness (RPG) comparison to commercial industry average

13 pharmaceutical companies from 2 industry consortia

INTERNATIONAL CONSORTIUM - INNOVATION + QUALITY - PHARMACEUTICAL DEVELOPMENT

ACS Green Chemistry Institute
Pharmaceutical Roundtable

2 universities

TU Delft

Prof. Sheldon



reports sustainable innovation impact achieved by scientists on an API process as RPG upgrade

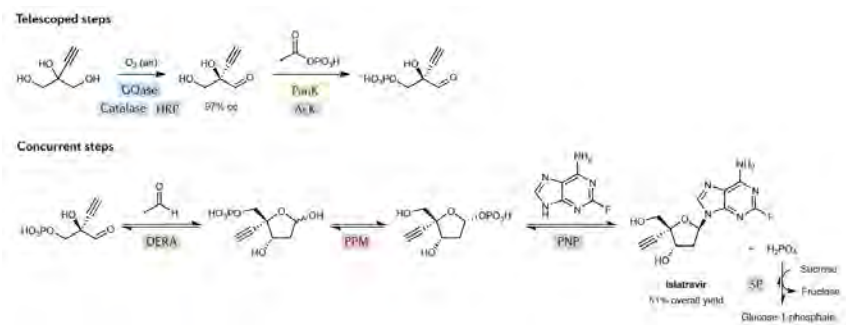
* ACS Sustainable Chem. Eng. 2021, ASAP. DOI: 10.1021/acssuschemeng.1c01940 (Open Access)

emphasizes contribution to UN SDG 12

An Industrial Application of Green Chemistry in Pharma



Industrial example of a biocatalytic cascade:*



The pharma industry depends on motivated and creative green chemists to make a difference and bring innovative, effective, safe and **sustainable medicines** to patients

* Total enzymatic synthesis of Merck's HIV drug islatravir. *Science* 2019, 366, 1255-1259. DOI: 10.1126/science.aay8484

Green Chemistry and Sustainable Chemistry In Scholarly Education in Germany & Globally

Prof. Dr. Klaus Kümmerer
Institute of Sustainable Chemistry



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- A HUMANIST UNIVERSITY
- A SUSTAINABLE UNIVERSITY
- AN ENTREPRENEURIAL UNIVERSITY

<http://www.leuphana.de/en/institutes/isec.html>

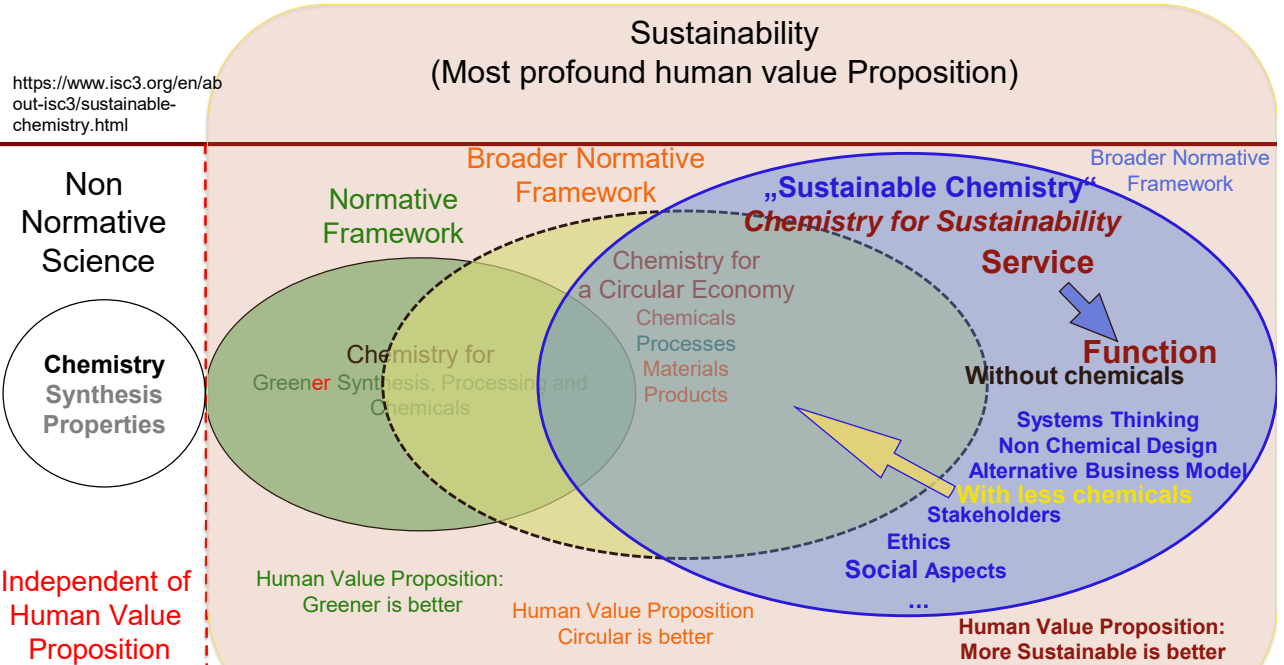
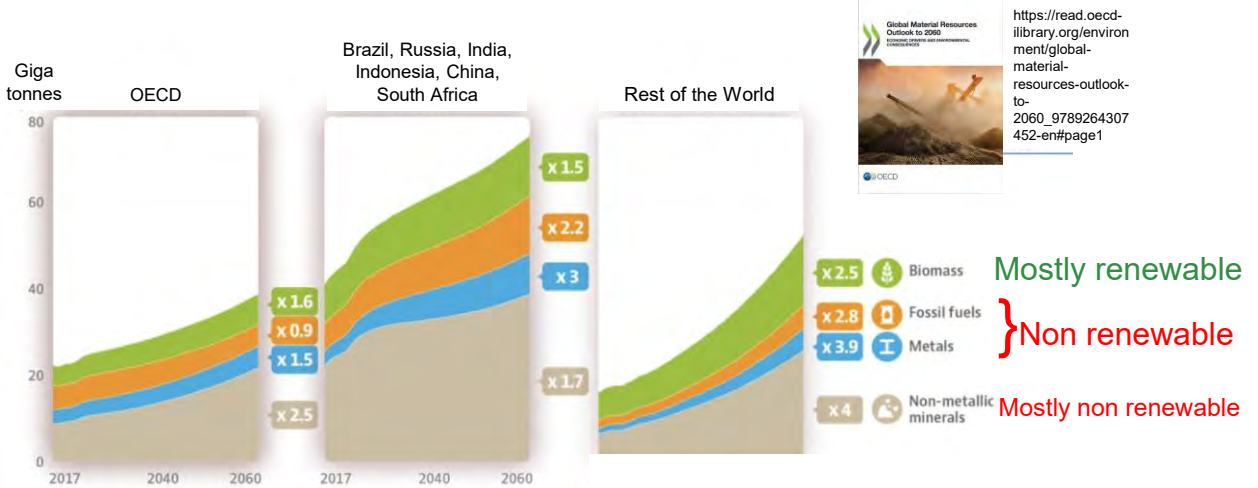


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International Sustainable Chemistry
Collaborative Center

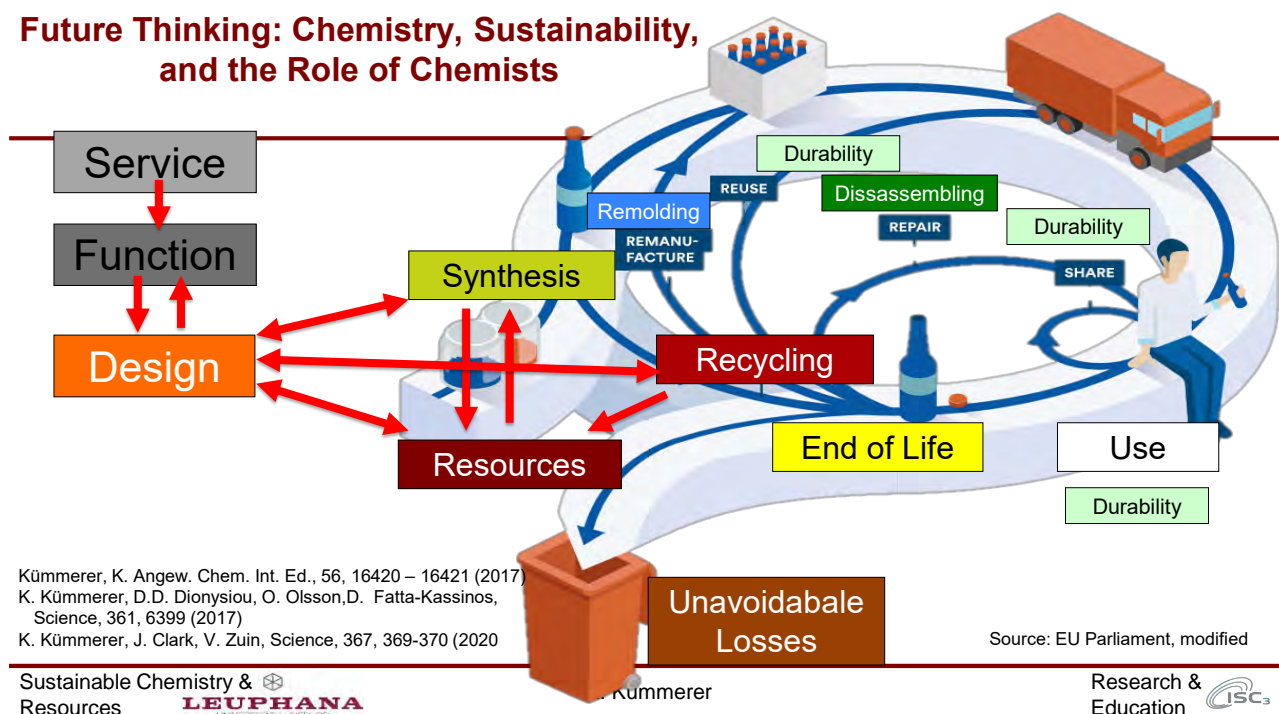
www.isc3.org

Trend

Use of Resources Will Double Until 2060



Future Thinking: Chemistry, Sustainability, and the Role of Chemists



Kümmerer, K. *Angew. Chem. Int. Ed.*, 56, 16420 – 16421 (2017)
 K. Kümmerer, D.D. Dionysiou, O. Olsson, D. Fatta-Kassinos, *Science*, 361, 6399 (2017)
 K. Kümmerer, J. Clark, V. Zuin, *Science*, 367, 369-370 (2020)

Audience Survey Question

ANSWER THE QUESTION ON BLUE SCREEN IN ONE MOMENT

How satisfied are you with green chemistry/sustainable chemistry in your country of residence?

- Very Satisfied
- Satisfied
- Neither Satisfied or Dissatisfied
- Dissatisfied
- Very Dissatisfied



2021 Survey GDCh Jungchemiker (Young Chemists) on Sustainable Chemistry in Education*

(<https://jcf.io/teams/nachhaltigkeit>)

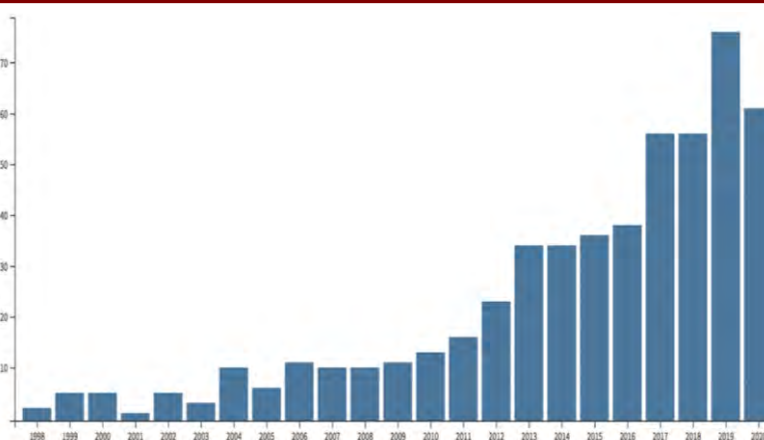
- 503 participants, all continents (2/3 Europe), 46 countries, average age around \approx 25
- Adequacy of SC in teaching: better in „developing“ countries, worse in „developed“
- > 90% of students ask for more
- > 80 expect that sustainability is more relevant for future professional life

* no differentiation between Green Chemistry (GC) and Sustainable Chemistry (SC)

Green Chemistry Education (GCE) and Sustainable Chemistry Education (SCE): Undergraduate & Graduate Level (including Education of Teachers)*

(V.G.Zuin, I.Eilks, M.Elschami, K.Kümmerer, Green Chem. 2021; DOI: 10.1039/d0gc03313h)

- Increasing number of programs for GC in higher education, e.g. Sichuan University (China), U York, U Amsterdam, U Nottingham, but still on low level, ...
- GCE often included in already existing context/modules, e.g. organic synthesis
- SCE rarely, if at all in teachers education
- Modules most often not mandatory
- External sources (e.g. ACS Green Chemistry Institute UNEP, UNIDO, U Sao Carlos (BR))
- A few Summer Schools (e.g. IUPAC, ACS Green Chemistry Institute, Leuphana U Lüneburg)
- Rarely extra occupational programs (U York, U Leuphana)



publications on GCE and SCE (1998–January 2021, based on Clarivate Analytics 202153); topics: green chemistry education or sustainable chemistry education; *no differentiation between Green Chemistry (GC) and Sustainable Chemistry (SC)

At Leuphana University - Faculty of Sustainability

Sustainable Transformation to Sustainability - Sustainability as a cross-cutting topic

- *Interdisciplinarity – Transdisciplinarity*
 - **Social basis of society**
(learning // management // governance)
 - **Physical basis of society**
(biotic // abiotic) -> **Chemistry**

At Leuphana University - Faculty of Sustainability
MSc Sustainability Science

<https://www.leuphana.de/en/graduate-school/course-offerings/sustainability-science.html>

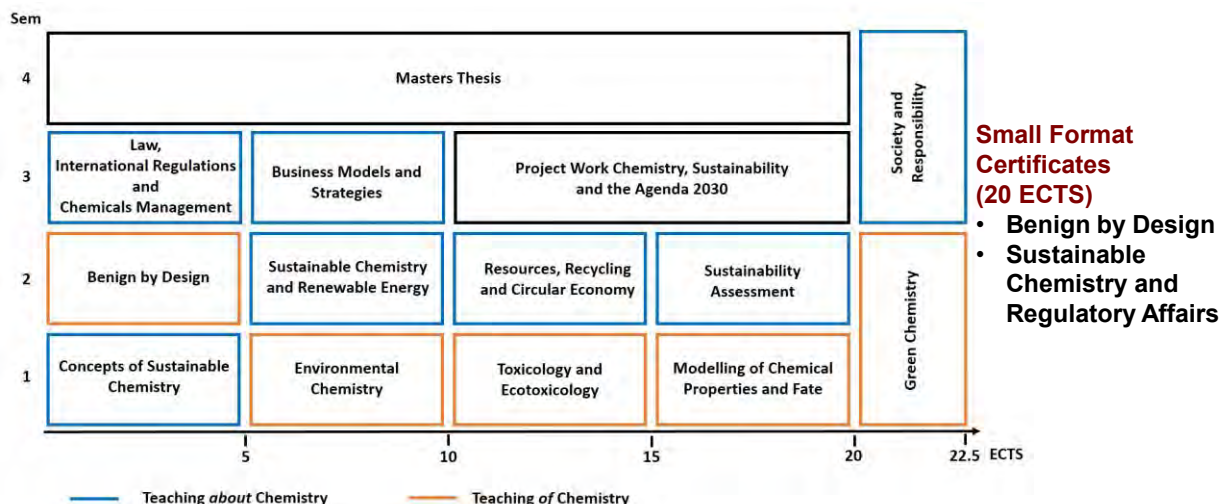
Methods and technologies to integrate the material, ecological, economical and social needs of a society, for sustainable development

- Inter- and Trans disciplinary Approach
- **A major in Sustainable Chemistry**
 - The realm of Sustainable Chemistry
 - Green Chemistry
 - Environmental chemistry
 - Computational chemistry
 - Analytical Chemistry
 - Benign by Design
 - (Eco)Toxicology
 - Resources
 - ...

Professional Master Sustainable Chemistry (MSc)

2 - Year Curriculum (90 ECTS)

German and European Accreditation; prerequisite: BSc or MSC in Chemistry



Sustainable Chemistry & Resources
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CHEMISTRY IN ECONOMY AND SOCIETY www.leuphana.de/en/professional-school/masters-studies/sustainable-chemistry-management.html

- Unique extra occupational expert inter and trans disciplinary training
- Real world oriented content
- International teaching staff (academia, industry, administration)
- Blended learning, most online
- **25 November 2021: On-Line Information Day**
- **10 December 2020: Application deadline**
- **March 2022: start next cohort**

Sustainable Chemistry & Resources
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K. Kümmerer

Research & Education
ISC₃

Take Home Message

1. GC and SC are on the rise, including education
2. Much more is needed
3. Enables a more sustainable contribution of chemistry to a more sustainable world
4. **Sustainable Chemistry is the awarding inter- and trans disciplinary approach and systems thinking instead punctual solutions**

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Sustainable Chemistry in Global Scholarly Education



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- Search Examples from Green or Sustainable Chemistry
- One hour webinar with experienced CAS experts including Q&A
- Pick from two options on Friday, September 10:
 - **5 AM EDT (11 AM CEST)** <https://bit.ly/SciFinderTraining1>
 - **9 AM EDT (3 PM CEST)** <https://bit.ly/SciFinderTraining2>



PLEASE JOIN US AFTER THE WEBINAR FOR NETWORKING WITH OUR SPEAKERS IN ZOOM BREAKOUT ROOMS

(Zoom link will be posted in chat)



The Green Evolution: Sustainable Chemistry in Global Scholarly Education



MARY KIRCHHOFF
Executive Vice President of Scientific
Advancement, American Chemical Society



H.N. CHENG
2021 ACS President and Research Chemist,
US Department of Agriculture



FRANK ROSCHANGAR
Highly Distinguished Research Fellow,
Boehringer-Ingelheim and co-chair,
ACS Pharmaceutical Roundtable



KLAUS KÜMMERER
Director, Institute of Sustainable and Environmental
Chemistry and Chair of Sustainable Chemistry and
Material Resources, Leuphana University Lüneburg

Presentation slides are available now! The edited recording will be made available as soon as possible.

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Date: Wednesday, September 15, 2021 @ 2-3:30pm ET
Speakers: Andrew Dove, University of Birmingham, UK and Robert Waymouth, Stanford University
Moderator: Rachel Letteri, University of Virginia

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What You Will Learn:

- Application of organic catalysts for stereocontrolled step growth polymerization
- Development of high temperature organic catalysts for polymerization and depolymerization
- Using organic catalysts to selectively depolymerize plastic mixtures
- New designs for ultrafast organocatalytic polymerization reactions
- Synergies between continuous flow chemistry and rapid organocatalytic polymerization reactions
- New catalysts enabling the design of emerging functional materials for gene delivery

Co-produced with: ACS Division of Polymer Chemistry



Date: Friday, September 17, 2021 @ 2-3:15pm ET
Speaker: Nick Meanwell, Bristol-Myers Squibb
Moderator: Deepak Dalvie, Crinetics Pharmaceuticals

[Register for Free!](#)

What You Will Learn:

- The identity of structural alerts that have been associated with problems in drug discovery and development
- The fundamental mechanistic organic chemistry subtending structural alerts that are subject to bioactivation
- Strategies and tactics to design around structural alerts

Co-produced with: ACS Division of Medicinal Chemistry, American Association of Pharmaceutical Scientists, and ACS Publications



Date: Wednesday, September 22, 2021 @ 2-3pm ET
Speakers: Patricia Redden, Saint Peter's University / Joey Ramp, Empower Ability Consulting, LLC / Ashley Neybert, Independence Science
Moderator: Partha Basu, Indiana University-Purdue University Indianapolis

[Register for Free!](#)

What You Will Learn:

- What does the Americans with Disabilities Act cover regarding access rights for service dogs
- How is a service dog selected for certain jobs or disabilities, and what type of training is required
- What types of service dogs exist and what is the process to obtain one

Co-produced with: Chemists with Disabilities (CWD) Committee, ACS Department of Diversity Programs, and ACS Diversity, Inclusion & Respect Advisory Board

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Mike Russell Erik Katie Erin

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Advancing Polymer Science with Organic Catalysts



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Designing Around Structural Alerts in Drug Discovery



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- Strategies and tactics to design around structural alerts

Co-produced with: ACS Division of Medicinal Chemistry, American Association of Pharmaceutical Scientists, and ACS Publications

Service Dogs in Your Chemistry Lab



Date: Wednesday, September 22, 2021 @ 2-3pm ET

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Moderator: Partha Basu, Indiana University-Purdue University Indianapolis

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