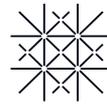




Universität
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Basel

PlantScience*News*

Newsletter of the Zurich-Basel Plant Science Center

No 28, Fall 2015

Upcoming Events

PSC Summer School – Tackling Wicked Problems

Einsiedeln, Zurich, 21-25 Sep 2015

Plenary Discussion – Plant Sciences, Patents and Food Security

ETH Zurich, 9 Oct 2015

PSC Symposium – Unlocking the Potential of Diversity

ETH Zurich, 3 Dec 2015



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Newsletter No. 28, Fall 2015

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Cover picture
*F. Schneider, F. Morsdorf, M. Schaepman,
University of Zurich, 2015*
3D-Optical and chemical diversity of 48000 reconstructed trees (Laegern, temperate forest). Mapping of light capture, longevity and defense compound chemistry (chlorophyll, cellulose, polyphenols) on 3D-reconstructed trees using spectranomics and airborne laser scanning, measured on July 18, 2014. See also page 8.

Editorial

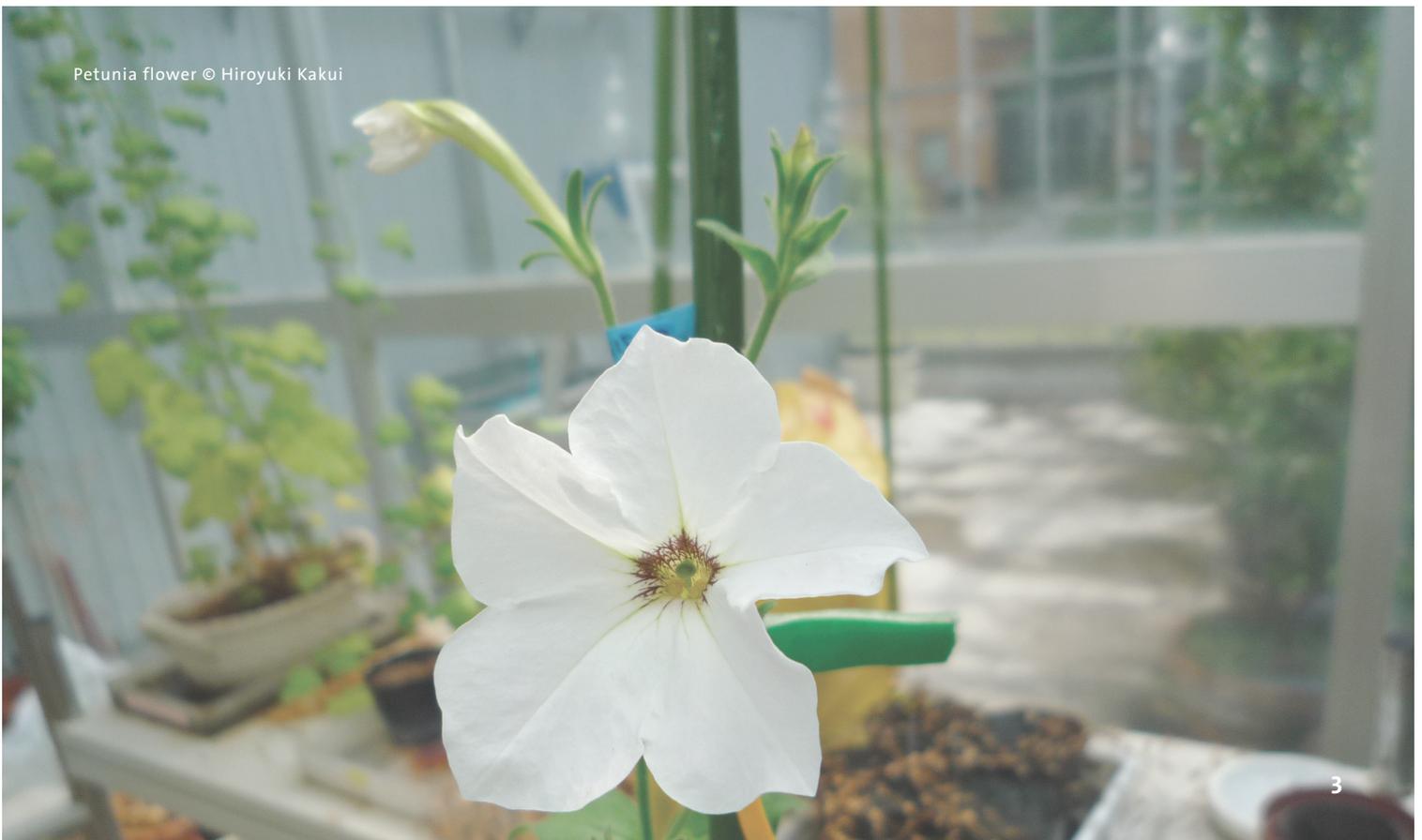


It is with great pleasure that I have the opportunity to introduce myself. I am taking over the position as coordinator of the PSC PhD Program Sciences and Policy where I will apply my scientific experience in a broad range of relevant environmental, agricultural as well as socio-economic studies. During my PhD, I investigated biodiversity on low-input farming and the assessment of genetic diversity in agricultural production systems. My personal and professional interest in the implementation of scientific results in the political environment was subsequently strengthened by different postdoctoral positions. For example, my mandate as long-term expert in a Foresight exercise of the Standing Committee of Agricultural Research SCAR comprised the active gathering of scientific knowledge and information in the field of bioeconomy, agriculture and food systems, and its transfer to scientific stakeholders as well as public authorities such as the European Commission and the Swiss Federal Office for Agriculture.

Now, in my new position, I aim to contribute to the improvement of bridging science and policy by supporting young scientists integrating and transferring their research to political action. This will not only include the provision of theory, such as tools and methods for improving communication and interaction at a challenging interface, but also provide opportunities to share firsthand experience with political actors, educators and experienced scientists at national and international level.

Luisa Last
Coordinator PSC PhD Program Science and Policy

Petunia flower © Hiroyuki Kakui



At a Glance

Awards

Nina Buchmann (ETH Zurich) has been elected as a member of the International Council for Sciences Committee on Scientific Planning and Review.

Jaboury Ghazoul (ETH Zurich) has been appointed as the new holder of the Prince Bernhard Chair of International Natural Conservation (Utrecht University, The Netherlands) from July 2015 for five years.

Peter Linder (University of Zurich) received the Cuatrecasas Medal for Excellence in Tropical Botany from the Smithsonian Natural Museum of Natural History. He is noted for his contributions to the systematics, biogeography, and evolution of Orchidaceae, Restionaceae, and Poaceae. He is also recognized for his valuable contributions to identifying biogeographical patterns in the Southern Hemisphere and especially in Africa.

Julia Vorholt (ETH Zurich) successfully applied for an ERC Advanced Grant – to study the structure function relationships of the phyllosphere microbiota.

David Basler (University of Basel) won the phenology and seasonality research contest 2014. In his PhD thesis he studied the influence of light and temperature on tree development (group of Christian Körner).

Dörte Bachmann (ETH Zurich) received the Hans Vontobel Award 2015. In her PhD thesis she examined why biomass production of diverse grassland is larger than that of less diverse grassland (group of Nina Buchmann).

Call for Proposals

PSC-Syngenta Fellowship Program

The PSC launches a new call for proposals under the PSC-Syngenta Research Fellowship Program. Applications for PhD and Post doc fellowships can be submitted until 1st of November 2015. The funds are intended to promote innovative research in plant sciences. In addition to the scientific quality of the projects and the qualification of the applicants, research co-operation within PSC will be an important criterion in the project selection.

This call is reserved for PSC professors and group leaders. For application templates, please contact:

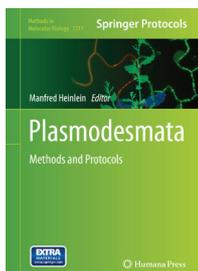
Manuela Dahinden

mdahinden@ethz.ch

More information

www.plantsciences.ch/research/fellowships/syngenta.html

Books



Plasmodesmata – Methods and Protocols

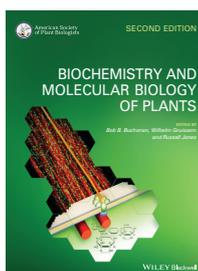
M. Heinlein (ed)

Methods in Molecular Biology Series, no. 1217

Humana Press. Springer Science+Business Media

New York, 2015

ISBN 978-1-4939-1523-1



Biochemistry and Molecular Biology of Plants

B. B. Buchanan, W. Gruissem, R. L. Jones (eds)

Wiley-Blackwell, UK, 2015, 2nd edition

ISBN 978-0-470-71422-5

Bridging plant science and society

Supported by the Mercator Foundation Switzerland, the PSC will award four transdisciplinary PhD fellowships

Manuela Dahinden

After the success of the first four PSC-Mercator PhD fellowships, the PSC and the Mercator Foundation Switzerland agreed to continue this promising fellowship program. In autumn 2015, all PSC members are invited to submit research projects addressing some of the emergent global challenges:

- climate change
- biodiversity (genetic and dietary diversity)
- limitation of resources
- sustainable agriculture
- ecosystem services

Tandem approach

The research projects will deal with socially relevant issues from the perspective of at least two academic disciplines and in collaboration with relevant stakeholder(s). The fellows will benefit from exposure to different methods, perspectives and solutions. The desired outcome is a new, more inclusive approach to research, bridging plant science and society. The PSC supports the 4-year research projects with its training and mentoring framework for research and knowledge sharing at the interface at plant science and policy. The fellows will be enrolled in the PSC PhD Program Science & Policy. Like all participants in this program they receive an introduction to policy implementation and transdisciplinary research. They acquire competencies that will help them in dealing with authorities and stakeholders, as well as advocating the dialogue with media and the public.

Role model

The PSC together with the Mercator Foundation Switzerland aims to contribute to the promotion of young talent as

well as to provide sustainable solutions for both society and the environment. The program will build on the experiences of the previous PSC-Mercator fellowship program. However, it will extend the already established training and research structures with further transdisciplinary tools such as problem-framing and synthesizing capacities. This program will serve as a model for the implementation of transdisciplinary research and training programs in Swiss Universities. In the end of the program the results and experiences will be accessible to a wide and interested audience in the form of a policy report and a think tank event.

Enhance the relevance of plant science in society

The contribution of plant science to solve socially relevant issues such as climate change and food security is largely underestimated. The reasons for this stem from low visibility and a lack of integration into social processes dealing with debate and decision-making. This program will address both of these issues. Social actors will be involved in the process of knowledge generation and from a practical perspective, this cooperation will translate into models, scenarios and recommendations or strategies which can then be directly integrated into society. The fellows will be encouraged to work across disciplinary boundaries. The next generation of plant scientists should become experts in their very specific research field, so they are able to take the next innovative step. Yet, they should invest time to learn from experts of other domains and effectively collaborate with them to address emerging challenges that society is currently facing.

Call for Proposals

PSC-Mercator Fellowship Program

The PSC launches a new call for proposals under the PSC-Mercator Research Fellowship Program. Applications for PhD fellowships can be submitted until 15th of December 2015.

This call is reserved for PSC professors and group leaders. For application templates, please contact:

Manuela Dahinden

mdahinden@ethz.ch



Stiftung
Mercator
Schweiz

Links

PSC-Mercator Fellowship Program

www.plantsciences.ch/research/fellowships/mercator

PSC PhD Program Science & Policy

www.plantsciences.ch/teaching/phdsciencepolicy

Industry Mentoring

Manuela Dahinden

A group of 30 PhD students, Post docs and PIs visited the Syngenta Crop Protection Research Center in Stein on 27th of August. The focus of the one-day symposium was an exchange on latest research innovations benefiting from beneficial microbes. During a guided tour the group had an opportunity to get to know the seed care institute and the new green house facilities. In the afternoon Christina Uhl presented an overview of career opportunities at Syngenta. PhD students and Post docs have principally two permanent entry points at Syngenta: as a team leader or scientific expert. Being a team leader implies leadership of a research group of 3 to 20 people. From time to time Syngenta offers positions on a temporary basis, such as internship, Post grad and Post doc positions. On a bachelor stage you could work as technical staff. Christina emphasized that both scientific and soft skills including the experience of different cultures are important for a successful recruitment. Syngenta seeks a potential to the applicants personal development. Employee at Syngenta are exposed to research and development, marketing and business environments. As Syngenta is a global company, employee need to be open to traveling and field work all over the world.

It becomes more and more important to introduce experiences of diversity in the application portfolio. For example due to training, internships, exchange programs or short term visits abroad.

The PSC is happy to support you!

For courses organized by the PSC please visit:

www.plantsciences.ch/teaching/phdplant-science/courses

Vacancies at the different Syngenta research centers are published at:

www.syngentajobs.com

PSC Mentoring Services

Welcome to new PhD students at ETH Zurich and University of Zurich

15 Sep 2015, ETH Zurich

Start the new semester with networking! Join us for a brief information session on our training programs and mentoring services. Administrative FAQs for graduate students, followed by a student apéro.

Company visit at KWS Saat AG

(for PhD students and Post docs)

9-11 Sep 2015, Einbeck, Germany

KWS Saat AG is one of the most innovative plant breeding companies in the world. This visit is an exceptional opportunity to directly talk to the research scientists and the career professionals from KWS Saat AG.

Frontiers in Plant Sciences

Visual Analytics of Large-Scale Biological Data

5-7 Oct 2015, ETH Zurich

by Dr. Kay Nieselt

Introduction to Genome – Wide Association Studies (GWAS)

12 & 13 Oct 2015, Villa of the Botanical Garden, University of Zurich

by Prof. Ueli Grossniklaus, Dr. Nuno Pirez, Dr. Arthur Korte

RNA Sequencing – A practical Course for Plant Scientists

10-13 Nov 2015, Functional Genomics Center Zurich, Irchel Campus

by Dr. Lucy Poveda, Dr. Weihong Qi, Lennart Opitz

Protein-coding Evolution and Detection Natural Selection

28 & 29 Jan 2016, ETH Zurich

by Dr. Maria Anisimova

PhD Courses

Challenges in Plant Sciences PSC Colloquium

30 Sep & 3 Nov 2015

Seminar on Transdisciplinary Research for Sustainable Development

30 Sep, 21 Oct, 4 & 18 Nov, 2 Dec 2015

Scientific Writing Practice 1

1, 9 Oct & 6 Nov 2015

Genetic Diversity Techniques

5 & 26 Nov 2015

Science & Policy: Building Political Support

5 Nov & 1 Dec 2015

Writing a Post-Doctoral Grant

19-20 Nov 2015

Scientific Visualisations using R

7 & 8 Dec 2015

Introduction to Statistics in Functional Genomics

10–11 Dec 2015

Science & Policy: Understanding Policy Evaluation

12 Jan & 9 Feb 2016

Registration

<http://spsw.registration.ethz.ch>

Nature Plants (2015)

doi:10.1038/nplants.2014.5

Gene duplication and genetic exchange drive the evolution of S-RNase-based self-incompatibility in *Petunia*

Kubo K, Paape T, Hatakeyama M, Entani T, Takara A, Kajihara K, Tsukahara M, Shimizu-Inatsugi R, Shimizu KK, Takayama S

Self-incompatibility (SI) systems in flowering plants distinguish self and non-self pollen to prevent inbreeding. While other SI systems rely on the self-recognition between specific male and female-determinants, the Solanaceae family has a non-self recognition system resulting in the detoxification of female-determinants of S-ribonucleases (S-RNases), expressed in pistils, by multiple male-determinants of S-locus F-box proteins (SLFs), expressed in pollen. It is not known how many SLF components of this non-self recognition system there are in Solanaceae species, or how they evolved. We identified 16-20 SLFs in each S-haplotype in SI *Petunia*, from a total of 168 SLF sequences using large-scale next-generation sequencing and genomic polymerase chain reaction (PCR) techniques. We predicted the target S-RNases of SLFs by assuming that a particular S-allele must not have a conserved SLF that recognizes its own S-RNase, and validated these predictions by transformation experiments. A simple mathematical model confirmed that 16-20 SLF sequences would be adequate to recognize the vast majority of target S-RNases. We found evidence of gene conversion events, which we suggest are essential to the constitution of a non-self recognition system and also contribute to self-compatible mutations.

Picture of *Petunia* on the cover of Nature Plants.
© Takayama et al.

Nature Communications (2015)

doi: 10.1038/ncomms6945

Quorum sensing triggers the stochastic escape of individual cells from *Pseudomonas putida* biofilms

Carcamo-Oyarce G, Lumjiaktase P, Kummerli R, Eberl L

The natural world is increasingly defined by change. Within the next 100 years, rising atmospheric CO₂ concentrations will continue to increase the frequency and magnitude of extreme weather events. Simultaneously, human activities are reducing global biodiversity, with current extinction rates at ~1,000 x what they were before human domination of Earth's ecosystems. The co-occurrence of

these trends may be of particular concern, as greater biological diversity could help ecosystems resist change during large perturbations. We use data from a 200-year flood event to show that when a disturbance is associated with an increase in resource availability, the opposite may occur. Flooding was associated with increases in productivity and decreases in stability, particularly in the highest diversity communities. Our results undermine the utility of the biodiversity-stability hypothesis during a large number of disturbances where resource availability increases. We propose a conceptual framework that can be widely applied during natural disturbances.

Nature Protocols (2015)

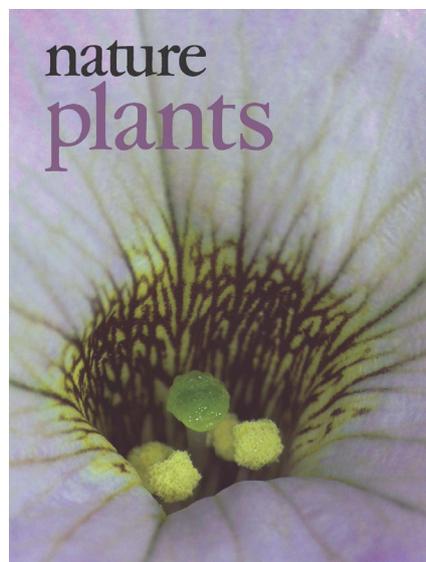
doi: 10.1038/nprot.2014.198

Fast sampling method for mammalian cell metabolic analyses using liquid chromatography-mass spectrometry

Martano G, Delmotte N, Kiefer P, Christen P, Kentner D, Bumann D, Vorholt JA

Metabolomics has emerged as a powerful tool for addressing biological questions. Liquid chromatography coupled with mass spectrometry (LCLC-MS) is widely used for metabolic characteriza-

tion, including targeted and untargeted approaches. Despite recent innovations, a crucial aspect of this technique is the sample preparation for accurate data analyses. In this protocol, we present a robust and adaptable workflow for metabolic analyses of mammalian cells from adherent cell cultures, which is particularly suited for qualitative and quantitative central metabolite characterization by LCLC-MS. Each sample consists of 600,000 mammalian cells grown on cover glasses, allowing for fast and complete transfer of the cells for metabolite extraction or medium exchange, e.g., for labeling experiments. The sampling procedure includes a fast and efficient washing step in liquid flow in water, which reduces cross-contamination and matrix effects while minimizing perturbation of the metabolic steady state of the cells; it is followed by quenching cell metabolism. The latter is achieved by using a -20 degrees cold methanol acetonitrile mixture acidified with formic acid, followed by freeze drying, metabolite extraction and LCLC-MS. The protocol requires 2 s for cell sampling until quenching, and the entire protocol takes a total of 1.5 h per sample when the provided nanoscale LCLC-MS method is applied.



Professor Michael Schaepman



Assessing biodiversity from space using airborne or satellite instruments still remains a challenge. Remote observations and models have only recently become sensitive enough to quantify photon-vegetation interactions. Only a few models allow measurement of spatially distributed physical, structural and biochemical traits. Combining the retrieval of key traits in the plant pigment system, its biochemistry as well as the architecture of individual species requires the use of spectranomics (imaging spectrometers on airborne or spaceborne platforms), in-situ sampling, including chemical trait analysis, as well as 3D-architecture reconstruction using terrestrial and Airborne Laser Scanners ALS. Currently, it is possible to measure the phylogenetic organization of plants as well as mapping the composition and chemistry of species using methods of light interaction with such modeling and remote sensing approaches. In particular, coupled soil-vegetation-atmosphere models and their inversion have advanced the retrieval of several biochemical and structural traits simultaneously. The goal of this work is to facilitate large scale monitoring of changing physical, structural and biochemical traits and their response to environmental influence. The final outcome will allow us to define a comprehensive set of Essential Biodiversity Variables EBVs, necessary to structurally monitor changes in traits, inform ecosystem services and ultimately validate policy measures (such as the Aichi targets of the Convention on Biological Diversity CBD).

Curriculum vitae

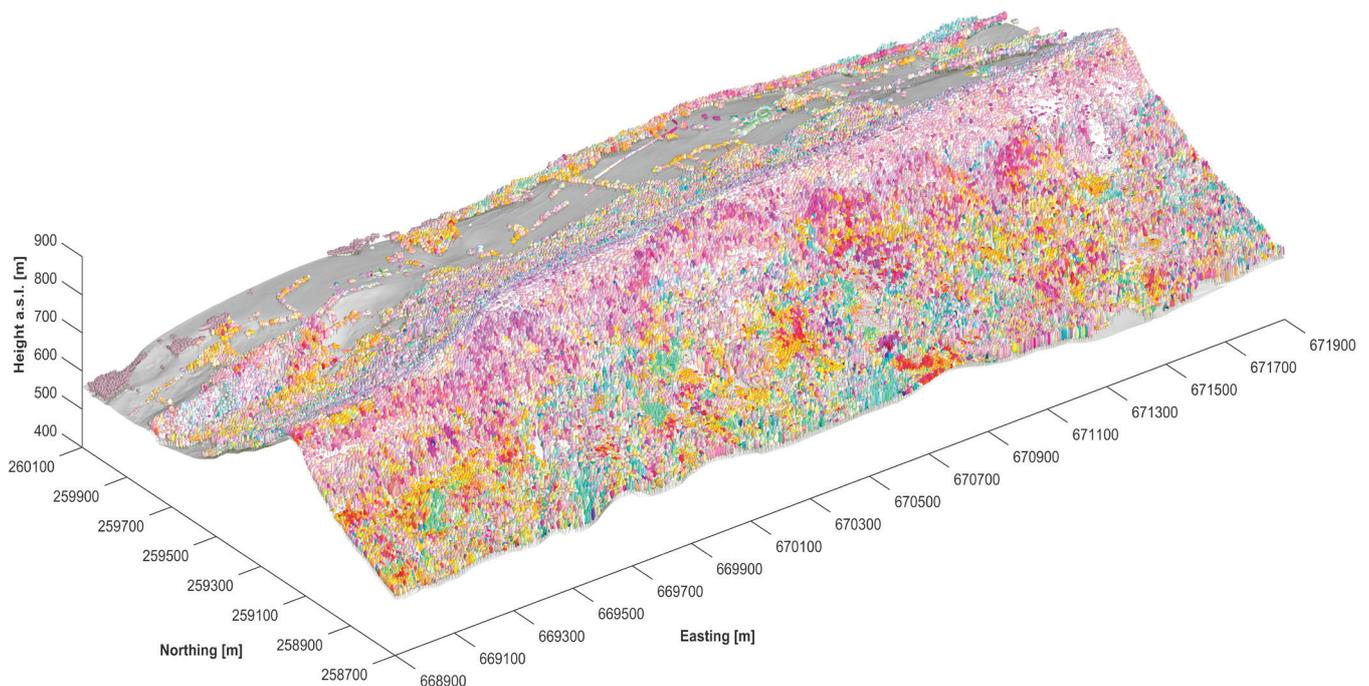
Michael Schaepman received his PhD from the University of Zurich in 1998. His work focused on spectroscopic systems to monitor the system Earth. Following a Post doc stay at the University of Arizona (Tucson, AZ, USA) focusing on spectroscopic imaging, he was appointed full professor of geoinformation science and remote sensing at Wageningen University in 2003. Here, he used remote sensing and modeling to quantify light

interactions with vegetation, in particular focusing on the pigment system. In 2009 he was appointed full professor of remote sensing at the University of Zurich. He works on assessing functional diversity from space using spectranomics. Since 2013, he is director of the University Research Priority Program on Global Change and Biodiversity (www.gcb.uzh.ch).

Professor Michael E. Schaepman
Remote Sensing Laboratories
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<https://swissplantscienceweb.ch/research/home/portfolio/schaepman>



Assessing biochemical and architectural diversity of a temperate forest. Spatial distribution of light capture, longevity and defense compound chemistry (chlorophyll, cellulose, polyphenols) on 3D-reconstructed trees using spectranomics and airborne laser scanning (Laegern, July 18, 2014).
© F. Schneider, F. Morsdorf, M. Schaepman, University of Zurich, 2015

Restoring degraded lowland forests of Borneo

This research was part of Dzaeman Dzulkifli's PhD thesis, conducted under the supervision of professor Andrew Hector formerly at the University of Zurich. Dzaeman was enrolled in the PSC Plant Science & Policy program with a Prodoc fellowship of the Swiss National Science Foundation.

Dzaeman Dzulkifli

During my PhD thesis I studied the restoration of tropical forests, in particular the lowland rain forests of north-eastern Borneo. I focused on the Dipterocarps: A family of trees that comprises the climax species of the region that dominate over 80% of the canopy coverage.

was capable of increasing 47% of forest floor light. This method also increased litter-fall production by 130% between the first two months of the study. However, this effect returned to baseline levels by the end of the year showing that long term effects could not be detected. On average, the climber cutting treat-



Work on the Sabah Biodiversity Experiment often included volunteers from various backgrounds. Here is a team of volunteers from various Shell offices as part of their Corporate Social Responsibility programs organised by Earthwatch institute. © Jhomar Getizo

The Sabah Biodiversity Experiment (500 hectares in size) provided me with a platform to test two of the most common techniques of silvicultural treatments in logged over tropical forests in the region. First, the climber cutting method consists of clearing the entire restored region of climbing plants which included lianas and climbing bamboo. Second, the line planting method consists of a three meter wide planting line on which above ground competition is cleared. Both methods are predominately used to increase light conditions on the forest floor to give seedlings a head start. We found that the climber cutting treatment

increased basal diameter growth rates of studied seedlings by 28%. A few groups of insects were affected in the short term. Arthropods that did not show a strong sign of recovery were cockroaches (*Blattodea*) and ants (*Hymenoptera, Formicidae*). Yet, they did not return to baseline (control) levels at the end of this study.

The Sabah Biodiversity Experiment was designed to provide insights to forest practitioners whether restoring these forest with a diverse mix could promote higher yield in biomass, stability from pest outbreak and climate change and the ability to increase the surrounding

floral and faunal diversity. The results of the experiments were directly transferred to practitioners in the field and are often directly incorporated into practice. Early results of the Sabah Biodiversity Experiment influenced large restoration projects (e.g. INFRAPRO forest restoration project) to incorporate a diversity of species when planting. Meetings with the forestry department's district officer of the Ulu-Segama Malua region provided insight to how restoration methods such as climber cutting affects residual arthropod diversity. In the future this will be taken into account when planning large scale management of degraded forests.

The PSC PhD Program Plant Science & Policy provided me with the relevant training in order to deal with a range of different stakeholders. I was able to get involved with local non-governmental organizations that focus on plant conservation initiatives and habitat fragmentation issues. Upon completion of my doctoral study I returned to Malaysia to lead a nation wide initiative that aims at setting up living collections of the country's most endangered tree species. This will include establishing a national seed bank on the Island of Borneo in the State of Sabah, www.trcrc.org. I have also been involved in workshops to implement the United Nation's Central Forest Spine Initiative and have been invited to assist in drafting up Malaysia's National Biodiversity Policy for 2015-2025.

Publication

Philipson CD, Dent DH, O'Brien MJ, Chamagne J, Dzulkifli D, Nilus R, Philips S, Reynolds G, Saner P, Hector A (2014).

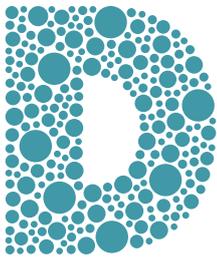
A trait-based trade-off between growth and mortality: evidence from 15 tropical tree species using size-specific relative growth rates.

Ecology and Evolution, 4(18):3675-3688

Contact

dzaeman@trcrc.org

New Agora Project



PSC DISCOVERY WORKSHOPS

Carole Rapo

Over the next two years, the PSC will develop together with plant scientists (Nina Buchmann, Sabina Keller, Célia Jaeger-Baroux, Bruno Studer, Martina Birrer, Samuel C. Zeeman, Michaela Stettler, Ueli Merz, Monika Maurhofer Brinolf, Kentaro Shimizu, Rie Inatsugi, Wilhelm Gruissem, Lukas Schütz & Thomas Boller), eight new Inquiry-Based Science Education workshops for secondary school students, as well as related tinkering activities.

The format of the workshops include hands-on experiments, lab tours, role plays and take-homes. The workshops are designed to foster an exchange of perspectives and views between the researchers and the secondary school students on the latest trends of plant science research and innovation and their relevance to our society and daily lives. The ETH Mint Lernzentrum will complement the PSC team with didactical expertise. Once developed, the workshops will be offered at the facilities of the Life Science Zurich Learning Center LSLC, the Science Lab of the University of Zurich, or directly at the researcher's home institution, or at the Climate Garden 2085 installation that will be launched in 2016 (see right infobox).

Impression from the Science Adventure Camp in Beatenberg organized by the PSC from 3-8 Aug 2015. In a week packed with experiments and fun activities children from the 3-6 class were looking at the survival strategies of plants in alpine areas. © Juanita Schläpfer

In April 2015, the PSC launched its new outreach program for school classes – the PSC Discovery Program for Youth. The program received financial support from the SNSF Agora funding scheme.

This coming autumn, Dr. Célia Jaeger-Baroux will present the first workshop on the visualization of plant components and their interactions using a 3D-rendering new instrumentation at the Institute of Plant Biology at the University of Zurich. We believe that this program will promote experimentations with the nature of science and enhance the understanding of the importance of plant science research for society.

Contact: Carole Rapo & Juanita Schläpfer

carole.rapo@usys.ethz.ch

juanita.schlaepfer@usys.ethz.ch

Upcoming

Climate Garden 2085

How will a changing climate affect plants in Switzerland? The PSC together with ProClim, GLOBE, Zürcher Hochschule der Künste, the Botanical Garden of the University of Zurich will address this important questions to a broad audience.

A garden based on two different climate scenarios will be planted in 2016. Visitors can experiment and discuss with scientists and philosophers, visions of a future in Switzerland. School class and family workshops, climate feasts, theatre performances, art exhibitions and storytelling will contribute to the dialogue.

The garden will be open from April to October 2016.

Contact: Juanita Schläpfer

juanita.schlaepfer@usys.ethz.ch



PSC Summer School Tackling Wicked Problems

21-25 Sep 2015 – Zurich, Einsiedeln

Using real-world case studies, the participants will learn to identify inherent properties of wicked problems and experience the learning cycle of open inquiry for dealing with wicked problems.

www.plantsciences.ch/teaching/summerschool.html

PLANT FELLOWS 3rd Annual Meeting

28 Sep-1 Oct 2015 – Hotel Boldern, Männedorf, Zurich

The meeting provides training courses on Advanced strategies for dealing with the publication process, Leading and developing a research group, Fundraising and proposal writing for Post docs, Practical advice for Post docs on data management, Embedding ethical appraisal in your research and ERC grant application training. The last three courses are also open to non-PLANT fellows Post docs (limited number of places available).

Contact: Sandrine Gouinguéné
sandrine.gouinguene@usys.ethz.ch



PLANT FELLOWS

More information on PSC events and registration details at:
www.plantsciences.ch/psc_events

PLANT FELLOWS Symposium

29 Sep 2015 – Hotel Boldern, Männedorf, Zurich

Join the largest coming together of Post docs and their principal investigators presenting state of the art of plant sciences research.

www.plantfellows.ch

PSC Colloquium Challenges in Plant Sciences

30 Sep & 3 Nov 2015 – ETH Zurich

The colloquium Challenges in Plant Sciences is a fundamental element of the PSC's graduate programs. It links students with a broad spectrum of faculty and group leaders in the plant sciences, and introduces participants to the diversity of research fields. Group projects and presentations enrich the experience.

Registration
<http://spsw.registration.ethz.ch>

Science & Policy Plenary Discussion

9 Oct 2015 – ETH Zurich

Can access to new technologies in plant breeding be ensured through open innovation platforms? Who should be in charge of the promotion of capacity development for agricultural innovation in tropical countries? In the plenary discussion Plant Sciences, Patents and Food Security we address these great challenges from different angles considering insights and perspectives from different experts.

Contact: Luisa Last
llast@ethz.ch

IDP BRIDGES 2nd Annual Meeting

28-29 Oct 2014 – Hotel Boldern, Männedorf, Zurich

The IDP BRIDGES Annual Meeting 2015 will consist of three major parts. First, the midterm review of the program and the corresponding research projects, with the visit of the EU officer. Second, a PhD retreat where the fellows present and discuss their research with peers, supervisors and associated partners. Third, three workshops: Targeted mentoring at the interface between science and policy with Michele Garfinkel, director of the Science Policy Program of EMBO; Strengthening the effective engagement of researchers with the public policy process with a moderated discussion among PIs, associate partners and fellows, and a green business workshop for the fellows providing insight into transferring a scientific project to a business idea.

PSC Symposium

3 Dec 2015 – Auditorium Maximum ETH Zurich

This year's PSC Symposium will unlock the potential of diversity. Scientists from Switzerland and around the world will present their latest research in the field. Presentations will focus on ongoing efforts to understand diversity mechanisms at epigenetic and genetic level. And furthermore the effects of diversity on the resilience of natural ecosystems and the productivity in agriculture.

Program, registration and submission of poster abstracts:

www.plantsciences.ch/symposium

PSC Symposium

Unlocking the potential of diversity

3 Dec 2015, ETH Zurich, main building, auditorium maximum

- 09.00 Opening remarks by **Bernhard Schmid**, University of Zürich
09.10 **Ioan Negrutiu**, Ecole Normale Supérieure, Plant Development and Reproduction, Lyon, France
Flower power – why and how plant science and geopolitics meet

Session I: Understanding diversity

- 09.40 **Magnus Nordborg**, Gregor Mendel Institute of Molecular Plant Biology, Vienna, Austria
Epigenetic diversity in Arabidopsis
10.10 **Michael Lenhard**, Potsdam University, Institute of Biochemistry and Biology, Genetics, Germany
Evolution of flower morphology after the outbreeding-to-selfing transition in Capsella
10.40 **Alex Widmer**, ETH Zurich & Zurich-Basel Plant Science Center, Switzerland
Genetic diversity and adaptation in natural populations
11.10 Break and poster session

Session II: Natural Systems

- 11.45 **Gerlinde De Deyn**, Wageningen University, Department of Soil Quality, The Netherlands
Illuminating the soil black box to unlock its potential
12.15 **Fernando Maestre**, Universidad Rey Juan Carlos, Mostoles/Madrid, Spain
Linking plant diversity at multiple levels with microbial diversity and ecosystem multifunctionality in global drylands
12.45 **Jonathan Levine**, ETH Zurich & Zurich-Basel Plant Science Center, Switzerland
Novel competitors shape plant species persistence with climate change
13.15 Lunch and poster session

Session III: Agricultural Systems

- 15.15 **Susan McCouch**, Cornell University, Dept. Plant Breeding & Genetics, Ithaca, USA
Linking genome wide association studies (GWAS) and plant breeding to better utilize natural variation in rice
15.45 **John Pickett**, Rothamsted Research, Harpenden, UK
Evidence for the wider value of diversity in plant secondary metabolism from the agro-ecological system, push-pull
16.15 **Dani Zamir**, Hebrew University of Jerusalem, Institute of Plant Science and Genetics, Rehovot, Israel
Yield canalization in crop plants
16.45 Poster awards and concluding remarks by **Samuel C. Zeeman**, ETH Zurich, chair PSC
17.00 Apéro

Program and online poster registration

www.plantsciences.ch/symposium

Poster abstract submission deadline is 30 October 2015.

Admission is free of charge but registration is required.



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