

## List of Master's Thesis Projects

Topic and Further Information	Contact
<b>BFH – School of Agricultural, Forest and Food Sciences HAFL</b>	
<p><b>Developing techniques and procedures to extract, treat and preserve cocoa pulp juice in cocoa growing areas of Ivory Coast to meet European food safety standards</b></p> <p>The aim is to generate added value through the use of parts of the cocoa fruit that is usually neglected. About 20% of the weight of freshly harvested cocoa beans can be extracted as a delicious tasting sweet and sour juice that has a high market potential for the western food and beverage industry.</p> <p>The Master Student will develop in a low tech environment techniques and procedures to extract, process and preserve the cocoa juice such as to be exportable and conform to European food safety standards.</p> <p>You should have a background in food sciences and be interested in implementing food quality and safety measures to treat the cocoa juice in a low-tech environment.</p> <p>You should be interested in experimenting with simple machines and adapt the process of cocoa juice extraction. Optimally, you have some experience in working with alternative/renewable energy sources. Generally, you should enjoy collaborating closely with the employees of the company CABOZ. Talking about that, the spoken language is French, so you should have some basic French skills. Last but not least you should like spending some time in a beautiful little remote village in Ivory Coast.</p>	<p>Elisabeth Eugster (elisabeth.eugster@bfh.ch) Ingrid Fromm (ingrid.fromm@bfh.ch)</p>
<p><b>PlantProtect</b></p> <p>Thielaviopsis basicola causes black root rot, which can lead to massive harvest and storage losses, depending on the plant species. The soil-borne mould is widespread worldwide and associated with at least 170 plant genera such as legumes, apples, peaches, lemon, zucchini, cotton, tobacco, various root vegetables. In Switzerland, T. basicola is a dreaded plant pathogenic mould, especially in carrots. The effects of the disease are usually observed late (in intermediate storage, on shop shelves or in the refrigerator at home).</p> <p>The present PlantProtect project aims to develop an alternative bio-conservation method based on a protective culture consisting of lactic acid bacteria. The aim is to establish a resilient microbial system that prevents the development of black rot on carrots (as a model organism). Bioconservation represents an alternative strategy to chemical plant protection and leads to a reduction of post-harvest losses (food waste).</p> <p>Remarks: interest in microbiology is a prerequisite</p>	<p>Elisabeth Eugster (elisabeth.eugster@bfh.ch) Fanny Louviot (fanny.louviot@bfh.ch) and Carlotta Sartori (carlotta.sartori@bfh.ch)</p>

<p><b><u>Edible insects</u></b>  Meat provides protein for humans. Its production requires a high resource input, which has a negative impact regarding environmental and social aspects. Therefore, researchers are looking for alternative sources of protein, such as edible insects. Today 65% of the world's population already eats them. So, why do Swiss and Western consumers hesitate to eat them?  In this master thesis you will use experimental research to investigate the reluctance and find out how to overcome it. Your master thesis will be written in form of a paper that you will submit to a peer-reviewed journal. You must therefore feel comfortable in writing in English.  Literature: Van Huis, A. et al. (2013). Edible insects. Future prospects for food and feed security. Rome, Food and Agriculture Organization of the United Nations (FAO).</p>	<p>Thomas Brunner  (thomas.brunner@bfh.ch)</p>
<p><b><u>3D-Printing and consumers' acceptance</u></b>  3D-Printing for food is a growing research field worldwide. However, only little is known about consumers' acceptance. In this master thesis, therefore, you will conduct a comprehensive nationwide paper-and-pencil survey to investigate the topic. In what form would consumers accept this new technology? What are the drivers of acceptance? Are there different consumer segments for 3D-printing? Questions like this and many more will be covered. Your master thesis will be written in form of a paper that you will submit to a peer-reviewed journal. You must therefore feel comfortable in writing in English.</p>	<p>Thomas Brunner  (thomas.brunner@bfh.ch)</p>
<p><b><u>Should products targeted to children display additional nutritional information or labelling to ensure conscious consumer choice?</u></b>  Background: Advertising influences food choices, especially those of children and adolescents. On a voluntary basis and using its own evaluation system, the Swiss food industry has committed itself (Swiss pledge) to limiting advertising directly targeted to children for foods considered unhealthy (high content in sugars, fat, salt, energy). However, if these products are excluded from advertising, they are not easily identifiable by the consumer on supermarket shelves. While it is mandatory to provide the nutritional composition of the products on the back of the packaging (/100g or 100ml), the nutritional quality of the products is not really indicated on the front of the packaging. It is possible on a voluntary basis to provide additional information concerning the nutritional quality of products on the front of the package (e.g. Nutri-Score, GDA...), but this practice is not very widespread, especially for products intended for children (e.g. carrying cartoons...).  Objective: Evaluate the nutritional quality of the main food products (Swiss market) with elements on their packaging aimed at children between 6 and 12 years old (e.g. cartoons, Disney characters, games...) using the criteria of the WHO - Europe, the Swiss pledge, as well as those of the Nutri-Score. Compare the results and evaluate the usefulness and effectiveness of making additional front-of-pack labelling compulsory for products intended for children in Switzerland. Check with a panel of consumers. Make recommendations on the type of information to be highlighted.  Procedure: Literature search on nutrition labelling for children's products. Selection of products clearly intended for children using Swiss food products databases (e.g. Swiss Nutrition Database,</p>	<p>Marie-Noëlle Falquet  (marie-noelle.falquet@bfh.ch)</p>

<p>Openfoodaccess...). Evaluation of products using WHO-Europe criteria, Swiss pledge, Nutri-Score. Consumer research (e.g. questionnaire, focus group...). Analysis of the results. Conclusion, recommendations.</p>	
<p><b><u>To what extent could Nutri-Score impact and drive products reformulation targeting salt/sugar/fat reduction in Switzerland?</u></b></p> <p>Background: Front of Pack nutritional Labelling (FOPL) systems have been introduced to allow consumers to make informed and health-conscious choices. Several systems are available in Europe, including in Switzerland, however their usage on food packaging stays on a voluntary basis. In Switzerland, the OSAV decided in 2019 to support the Nutri-Score, as the preferred system (like France, Belgium, Germany, the Netherlands and Spain). If the benefits of the presence of Nutri-Score on a product can be scientifically demonstrated for the consumers, the benefits of the Nutri-Score implementation are less obvious for the food manufacturers.</p> <p>Objectives: Evaluate the current and potential impact of the Nutri-Score on the products reformulation targeting salt/sugar/fat reduction in Switzerland. Quantify the necessary salt-/sugar-/fat-reductions that need to be achieved to induce a change of level in Nutri-Score ratings. Compare with current Swiss strategies on salt, sugars and fat reduction. Determine the potential advantages and barriers that could play the Nutri-Score to promote the efforts done by Swiss food manufacturers.</p> <p>Procedure: Literature search on the impact of FOPL on product reformulation and innovation. Comparison of the nutritional compositions of products having Nutri-Score vs no Nutri-Score. Study Nutri-Score algorithm. Simulate product reformulations for key product categories. Collect perspective of food manufacturers.</p>	<p>Marie-Noëlle Falquet (<a href="mailto:marie-noelle.falquet@bfh.ch">marie-noelle.falquet@bfh.ch</a>)</p>
<p><b><u>Evaluation of the various strategies / policies to limit marketing of unhealthy foods to children</u></b></p> <p>Context: Today children continue to be targeted by specific advertising campaigns for food products that are high in fat, sugar and salt (HFSS), despite several measures taken the past ten years. This has been exacerbated by the development of digital and social media, portable device. WHO is calling on government to implement more stricter measures that restrict underage advertising, and as result to limit the negative effects of advertising on children health.</p> <p>Objective: The objective of this work would be to study latest scientific evidences supporting the various strategies to limit marketing on unhealthy foods to children. What is the evidence behind each strategy? What strategies have been already applied worldwide and how effective were they? What are the conditions of success of each of the strategies (target products, additional labelling...)? Based on the results, propose a set of</p>	<p>Marie-Noëlle Falquet (<a href="mailto:marie-noelle.falquet@bfh.ch">marie-noelle.falquet@bfh.ch</a>)</p>

<p>recommendations that can be applicable to Switzerland. Get the opinion of the Swiss food industry on this set of recommendations. Methods: Literature review. Review Swiss situation and measures in place. Interviews, questionnaires.</p> <p>Additional remark: possibility to prepare some specific aspects (already defined) of the thesis through FNH-7 module</p>	
<p><b><u>Could existing applications for Smartphone potentially help consumers to achieve a healthy diet?</u></b></p> <p>Smartphones are now fully integrated in our daily life. Through them, consumers can get access to a large range of applications (Apps) especially in the field of nutrition and health. The offer covers not only tools for calories counting but as well keeping food records, measuring salt consumption or exercise activities for example. The aim of the study would be to better understand the current offer in Switzerland, and to evaluate it from a scientific perspective by understanding on which nutritional recommendations and/or evidence they are based.</p>	<p>Marie-Noëlle Falquet (marie-noelle.falquet@bfh.ch)</p>
<p><b><u>Apart proteins, what else in edible insects?</u></b></p> <p>Today, the use of insects in occidental diet is under debate. If edible insects are currently identified as an interesting source of protein, and thus as a meat-alternative, what about their contribution in term of the other nutrients?</p> <p>The topic would cover aspects such as:</p> <ul style="list-style-type: none"> <li>- Evaluate for the main insects' types that are allowed in food (Swiss and European regulations), their nutritional profile (lipids, vitamins, minerals) using literature and nutritional databases. Identify their antinutritional and allergenic factors.</li> <li>- What are the current availability and quality of those insects on the Swiss and European markets?</li> <li>- What role could they play in the Swiss diet?</li> </ul> <p>What could be the technological challenges and opportunities (in relation with identified nutrients) related to the transformation of those edible insects into manufactured food (e.g. shelf life, .....)?</p>	<p>Marie-Noëlle Falquet (marie-noelle.falquet@bfh.ch)</p>
<p><b><u>Which nutrition and health claims are most considered by consumers?</u></b></p> <p>If a product offers nutritional benefits, the law allows a wide range of nutrition and even health claims to be made on the label, providing the product meets the legal conditions. However, the same product may satisfy several and therefore be eligible for several nutrition and health claims. So how to choose a nutrition and health claim, to better impact the choice of consumer for healthy foods?</p> <p>Objectives: Based on the latest scientific studies, determine the factors to be considered when selecting nutrition and health claims. Establish a method (example: decision tree) for choosing a nutrition or health claim that would most influence consumer choice. It is therefore a matter of defining the key aspects of selection (e.g. length of claim, type of health benefit, type of</p>	<p>Marie-Noëlle Falquet (marie-noelle.falquet@bfh.ch)</p>

<p>nutrient) and then of prioritizing them methodically according to their impact on consumer choice for healthy food. Once established, this method will be applied to a range of vegetables (the most consumed vegetables in Switzerland), and its effectiveness evaluated via consumer tests.</p> <p>Procedure: bibliographic research (e.g. from European projects FLABEL, CLYMBOL and other recent studies), establishment of a methodology based on scientific criteria, study of regulatory documents on nutrition and health claims, organization of consumer tests.</p>	
<p><b><u>Reduction of added sugars in milk-based desserts/drinks</u></b></p> <p>Context: Today the average consumption of added sugars in Switzerland (circa 120g/d) is far above the WHO recommendations (50g/d). But humans are accustomed to sweet taste and highly appreciate this comforting taste, which makes the change of habits highly challenging. The main contribution comes from processed food products, consumed on a regular basis. Milk-based desserts (e.g. puddings) and drinks (e.g. caffe latte) are significantly contributing to the situation.</p> <p>Objectives: Reduce significantly the added sugars content of 2 defined milk-based products, while keeping their main organoleptic properties. Define the maximum level of sugars reduction while maintaining the acceptance of the reformulated products by a panel of consumers.</p> <p>Procedure: Understand the roles of added sugars in the products. Literature review about the various possible reformulation strategies, their pros and cons. Develop recipes and realize prototypes (laboratory scale) with various reduced sugars contents. Observe and quantify changes in behavior during the various stages of production. Characterize finished products by simple analytical methods. Evaluate the quality of the products in a visual and sensory way. Select the most promising levels of reduction. Evaluate acceptance of consumers. For each end proposal, propose a SWOT analysis. Establish the optimal level of sugars reduction for these products. The use of additives, as alternatives should be excluded.</p>	<p>Marie-Noëlle Falquet (marie-noelle.falquet@bfh.ch)</p>
<p><b><u>3D-Microextrusion (Additive Manufacturing)</u></b></p> <p>3D-Mikroextrusion is one research area we strongly focus on and also a growing research field worldwide (complex of issues: food stuff 3D). As the interest of industry increases, several topics are available, also related to health issues (e.g. dysphagia, salt/sugar perception, fat perception). Please directly contact us if you have interest in 3D-printing. The focus of the works in general is on the food material itself, however if someone is interested in a work more focussing on technical matters of 3D-printing, please also contact us. All works are confidential, so details can be revealed after a confidentiality agreement has been signed. Focus is on the food part and not on the technical aspects of printing. 3D-printing, sensory sciences and consumer sciences can be linked interdisciplinary in most of the cases if desired.</p>	<p>Christoph Denkel (christoph.denkel@bfh.ch)</p>

<p><b><u>Set-up of a tool to determine the sugar release of food stuff real-time under structure disruptive conditions (complex of issues: food stuff 3D).</u></b></p> <p>The reduction of sugar in food stuff seems is an important goal in Switzerland. However, no standardized methods exist to determine the sugar release of food stuff during chewing. In this work we will try to establish a reproducible process to mimic chewing and monitor the sugar release over time. The candidate should bring with endurance and creativity. This work is confidential, so details can be revealed after a confidentiality agreement has been signed.</p>	<p>Christoph Denkel (christoph.denkel@bfh.ch)</p>
<p><b><u>Animal Blood - Incorporation in processed meat products? (complex of issues: proteins)</u></b></p> <p>Animal blood is obtained in large amounts when animals are slaughtered. This is in contrast to its nutritional properties, only a small quantity is again incorporated in food stuff like in black sausages or venison products. In this thesis we will investigate if and how fractions of blood with focus on technofunctional properties can be incorporated in processed meat products. This work is confidential, so details can be revealed after a confidentiality agreement has been signed.</p>	<p>Christoph Denkel (christoph.denkel@bfh.ch)</p>
<p><b><u>Adjusting the size of micro-particles for new functionalities</u></b></p> <p>Micro-particles are known to mimic fat in semi-solid food (e.g. yoghurt) and are usually produced from whey. There are different techniques available for preparation like high pressure homogenization or shearing, both in combinations with heating. The size of the micro-particles is usually adjusted by the process and is variable between 0.5 and &gt;30 µm.</p> <p>Approach: In this master thesis we would like to focus on the preparation of micro-particles in the sub-micrometer range with a combination of two different processing steps. Before being submitted to particulation, the proteins have to be pretreated to kept particles in the sub-µm domain. We will also compare different protein types. The project is confidential and in collaboration with industry, details can be revealed after the signature of a confidentiality agreement.</p> <p>This master thesis will be supervised by: Dr. Christoph Denkel, HAFL (processing), Jonas Lonfat (processing) and Markus Vaihinger (processing and analytics). The place of work will be HAFL.</p>	<p>Christoph Denkel (christoph.denkel@bfh.ch) Markus Vaihinger (markus.vaihinger@bfh.ch) Jonas Lonfat (jonas.fonfat@bfh.ch)</p>
<p><b><u>Mixed gels based on alternative protein sources</u></b></p> <p>The market of meat-like products based on alternative protein sources is strongly growing, consumers request more diversity but also starting to take into account sustainability aspects for their buying decision. On the other side, Swiss industry is looking for new solutions to participate in this trend.</p> <p>Approach: We will investigate a new extrusion approach to design new microstructures and textures, respectively, in mixed protein systems, either focusing on meat/non-meat or non-meat/non-meat mixtures. The basic idea is to induce new and adjustable microstructures as well as adjust the intensity of flavor perception in mixed protein gels. Mixing different proteins enables to increase the biological value and to alter functional properties of the product like firmness, creaminess, juiciness and so forth. The project is confidential, details can be revealed after the signature of a confidentiality agreement.</p>	<p>Christoph Denkel (christoph.denkel@bfh.ch) Katrin Kopf (katrin.kopf@bfh.ch) Markus Vaihinger (markus.vaihinger@bfh.ch)</p>

<p>This master thesis will be supervised by: Dr. Christoph Denkel, HAFL (processing, analytics), Dr. Katrin Kopf, HAFL (nutritional aspects), Benjamin Schütz (pilot plant) and Markus Vaihinger (analytics). The place of work will be HAFL. Collaboration with an industry partner is possible and depending on the concrete focus of the work.</p>	
<p><b><u>Salt perception in differently disintegrated food</u></b></p> <p>With increasing disintegration energy, the viscosity of food systems can increase. The viscosity of food has multiple impacts on its physiological properties: the availability of minor ingredients like vitamins could be increased, the feeling of satiety could be altered, swallowing could be changed (which is of high relevance for dysphagia patients), the flavor/salt/sugar perception could be different, functional properties of some components could be changed and so forth. Besides classical disintegration techniques (high-speed cutting e.g.), ball milling is one of the most intensive disintegration method, e.g. used to open biological cell to release proteins or enzymes. Due to its high energy input in the system, structural components of natural materials like fibers can also be hydrated. As a result, the viscosity increases without the addition of any hydrocolloid or increasing the dry matter (e.g. vegetable purees). Viscosity and microstructure after disintegration is expected to have an impact on salt perception</p> <p>Approach: In this master thesis, we will disintegrate with two different disintegration techniques (high-speed cutting, ball milling) three selected food systems with different dry matter and investigate (a) their flow behavior and (b) analyze the perception of different salt concentrations in the viscose and gelled state. The results and findings are of high importance and will be continued to use in projects in the frame of additive manufacturing, dysphagia and the availability of secondary plant metabolites with physiological importance.</p> <p>This master thesis will be supervised by: Dr. Christoph Denkel, HAFL (processing, analytics). The place of work will be HAFL. The project is confidential, details can be revealed after the signature of a confidentiality agreement. The work is part of planned research project with the Swiss food industry.</p>	<p>Christoph Denkel (christoph.denkel@bfh.ch)</p>
<p><b><u>A new approach to reduce sugar in food by means of additive manufacturing</u></b></p> <p>Additive manufacturing of food products is a new technological approach that is still in its early stages but could develop towards a game changer in the food business. In particular, the megatrend of individualization will drive the demand for tailored, decentralized food production. Using fresh cheese as a model system, we found in a recent student's work that the sugar perception in general and over time can be adjusted by selectively placing sugar in the sample. As the work was designed as a feasibility study, neither the structure-sensory-relationships nor the impact of concentrations, general limits and so forth have been investigated.</p> <p>Approach: In the present master thesis, we would like to systematically investigate all relevant parameters for our model system to deviate the main process-structure-sensory-relationships. This work contributes to a better understanding how additive manufacturing could be used to reduce the amount of sugar in food.</p>	<p>Christoph Denkel (christoph.denkel@bfh.ch)</p>

<p>This master thesis will be supervised by: Dr. Christoph Denkel, HAFL (analytics). The place of work will be HAFL. The project is confidential and in collaboration with industry, details can be revealed after the signature of a confidentiality agreement.</p>	
<p><b><u>Feasibility study to investigate a new extrusion method to texture food in order to increase the salt perception</u></b>  High-moisture extrusion is used as a standard method to induce a fiber-like structure in meat-analogues. Usually the material is heated, kneaded and then cooled during the mass is sheared. This shear effect in combination with cooling leads to the desired texture. Independent of that, food industry tries to find solutions to reduce the salt content in food stuff. The structure of the food is a key parameter to alter salt perception. If the perception is increased the salt concentration could be reduced.  Approach: In this master thesis we will investigate and test the feasibility of a new extrusion head that is developed at HAFL in collaboration with a company. The overall goal is to tailor microstructures in a way that the salt perception can be adjusted. The project is confidential, details can be revealed after the signature of a confidentiality agreement.  This master thesis will be supervised by: Dr. Christoph Denkel, HAFL (processing, analytics), Benjamin Schütz (pilot plant) and Markus Vaihinger (analytics). The place of work will be HAFL.</p>	<p>Christoph Denkel  (christoph.denkel@bfh.ch)  Benjamin Schütz  Markus Vaihinger  (markus.vaihinger@bfh.ch)</p>
<p><b><u>Development and Optimisation of a sensory method for training panel members in evaluation of fermented dairy products</u></b>  Sensory characterization of fermented milk products is difficult and therefore panelists need a lot of training. Natural products are not always suitable to learn specific flavors. Therefore, a method should be established which allows the transfer of "key flavors" into fermented milk matrices using diffusion to get standardized training material.</p>	<p>Barbara Guggenbühl  (Agroscope): please contact Daniel Heine  (daniel.heine@bfh.ch)</p>
<p><b><u>Development and Optimisation of a sensory method for training panel members in evaluation of fermented dairy products</u></b>  Sensory characterization of fermented milk products is difficult and therefore panelists need a lot of training. Natural products are not always suitable to learn specific flavors. Therefore a method should be established which allows the transfer of "key flavors" into fermented milk matrices using diffusion to get standardized training material.</p>	<p>Markus Vaihinger  (markus.vaihinger@bfh.ch)</p>
<p><b><u>Sustainable pricing system – a concept beyond fair trade</u></b>  Are you interested in concepts such as « beyond fair trade », « living income for farmers », « fair value distribution » and « blockchain »? Our Swiss Start-up is developing the first sustainable pricing system. We are looking for a stellar Master's student to help us to develop our model from the consumers' perspective. Your research question will be: «what is the most successful way to inform consumers about fair value distribution»? You will conduct qualitative and/or quantitative consumer's interviews, will let your creativity flourish to design different options to disclose price information on products' packaging (form and content), analyse results using statistical softwares and provide us with your recommendations. In return, we offer you the opportunity to work in a Start-up environment and on a real pilot project and provide you with all the support you need. Looking forward to meeting you!  <b>Start: November 2019</b></p>	<p>Evelyn Markoni  (evelyn.markoni@bfh.ch)</p>

External Advisors from the Start-up located in Bern and Geneva	
<p><b><u>Sustainable Food Value Chains – What is the role of social media?</u></b></p> <p>Innovative technologies can play a crucial role for enhancing transparency in food value chains, e.g. social media and interactive platforms. A literature review and interviews with farmers, processors and consumers in Switzerland will highlight the opportunities and risks of using innovative approaches to foster sustainability of conventional value chains.</p> <p>The objective is to enhance and monitor the release of information and knowledge management along the value chain, promote cooperation, and strengthen actors at both ends of the chain: processors and consumers. The Master’s thesis will be written in collaboration with Foodways Consulting.</p>	<p>Evelyn Markoni (<a href="mailto:evelyn.markoni@bfh.ch">evelyn.markoni@bfh.ch</a>)</p>
<p><b><u>Anspruch und Wirklichkeit eines nachhaltigen Lebensmittelkonsums: Warum stossen Berner FoodPioniere an ihre Grenzen?</u></b></p> <p>Berner FoodPioniere versuchen einerseits nachhaltig produzierte Lebensmittel anzubieten und andererseits Konsumierende für eine nachhaltige Ernährung zu sensibilisieren. Dabei stossen sie auf unterschiedliche Herausforderungen, wenn sie ihren Anspruch an eine nachhaltige Ernährung in die Tat umsetzen wollen.</p> <p>Die Arbeit soll diese Lücke zwischen Anspruch und Wirklichkeit erforschen, indem individuelle Barrieren aufgezeigt und analysiert werden. Dies mithilfe von qualitativen Interviews. Bitte beachten Sie, dass ein gutes Niveau der deutschen (oder französischen) Sprache erforderlich ist, da die Interviews auf Deutsch (bzw. Französisch) geführt werden.</p>	<p>Evelyn Markoni (<a href="mailto:evelyn.markoni@bfh.ch">evelyn.markoni@bfh.ch</a>) Franziska Götze (<a href="mailto:franziska.goetze.bfh.ch">franziska.goetze.bfh.ch</a>)</p>
<p><b><u>Eine nachhaltige Ernährung ist eine regionale Ernährung!</u></b></p> <p>Viele Konsumierende, die sich nachhaltig ernähren wollen, haben eine genaue Vorstellung, wie eine solche Ernährungsweise auszusehen hat. Die Arbeit erforscht genau diese Vorstellungen einer nachhaltigen Ernährung von bewussten Konsumierenden in Bern mithilfe qualitativer Interviews. Welches Angebot wünschen sich Konsumierende diesbezüglich für Bern?</p> <p>Bitte beachten Sie, dass ein gutes Niveau der deutschen (oder französischen) Sprache erforderlich ist, da die Interviews auf Deutsch (bzw. Französisch) geführt werden.</p>	<p>Evelyn Markoni (<a href="mailto:evelyn.markoni@bfh.ch">evelyn.markoni@bfh.ch</a>) Franziska Götze (<a href="mailto:franziska.goetze.bfh.ch">franziska.goetze.bfh.ch</a>)</p>
<p><b><u>Wenn es bereits heute schon Erdbeeren gibt, warum soll ich sie erst morgen konsumieren?</u></b></p> <p>Konsumierende, die sich nachhaltig ernähren möchten, verhalten sich nicht immer so. Die Lücke zwischen Einstellung und Verhalten ist oftmals gross. Warum ist dies so? Und welche Barrieren gibt es, den eigenen Willen in die Tat umzusetzen? Die Arbeit soll genau diese Lücke mithilfe quantitativer Interviews erforschen, um Lösungsansätze für diese Problematik zu diskutieren.</p> <p>Bitte beachten Sie, dass ein gutes Niveau der deutschen (oder französischen) Sprache erforderlich ist, da die Interviews auf Deutsch (bzw. Französisch) geführt werden.</p>	<p>Evelyn Markoni (<a href="mailto:evelyn.markoni@bfh.ch">evelyn.markoni@bfh.ch</a>) Franziska Götze (<a href="mailto:franziska.goetze.bfh.ch">franziska.goetze.bfh.ch</a>)</p>
<p><b><u>Sustainable Food Value Chains – Challenges and opportunities of transparency in Meat Value Chains</u></b></p> <p>Low production prices as well as consumer expectations on sustainability, lead to serious struggles for the actors along the meat value chain. A core claim concerning the discussion about more sustainable value chains is transparency. Transparency is tied</p>	<p>Evelyn Markoni (<a href="mailto:evelyn.markoni@bfh.ch">evelyn.markoni@bfh.ch</a>) Franziska Götze (<a href="mailto:franziska.goetze.bfh.ch">franziska.goetze.bfh.ch</a>)</p>

<p>to both positive connotations (e.g. empowerment of consumers and processors) and negative connotations (e.g. use of information). First and foremost, research about the processes of transparency along the chain, particularly on challenges and opportunities must be expanded for a positive outcome.</p> <p>A literature review, case studies collection and interviews with farmers or processors in Switzerland will highlight the opportunities and risks that are related to the strengthening of transparency in the conventional meat value chain.</p>	
<p><b><u>Die lebendige Food Hauptstadt Bern – Inwiefern tragen Bauernbetriebe bereits heute zu einem regionalen Wertschöpfungskreislauf bei?</u></b></p> <p>In der Region Bern existieren derzeit 38 heterogene Bauernbetriebe, die landwirtschaftliche Güter produzieren. Unklar ist, inwiefern diese bereits heute zur urbanen Versorgung beitragen. Die Masterarbeit zum Thema „Bern – Die lebendige Food Hauptstadt?“ soll mithilfe einer quantitativen Untersuchung bestehende Formen urbaner Landwirtschaft erforschen. Dabei stellt sich zudem die Frage, was eine lebendige Food Hauptstadt auszeichnet? Inwieweit ist diese selbstversorgend? Die Masterarbeit erfolgt in Zusammenarbeit mit Slow Food Bern und embrace. Die Ergebnisse dieser sehr aktuellen Fragestellungen können auf politischer Ebene eine Wirkung erzielen, indem verstärkt für bestehende Berner Bauernhöfe Sorge getragen wird.</p> <p>In collaboration with Dr. Raphael Pfarrer (Slow Food Bern); Caspar Lundsgaard-Hansen (embrace, Stadtplanungsamt Bern)</p>	<p>Evelyn Markoni (evelyn.markoni@bfh.ch) Franziska Götze (franziska.goetze.bfh.ch)</p>
<p><b><u>Die lebendige Food Hauptstadt Bern – Welche regionalen Wertschöpfungskreisläufe sind in Bern denkbar?</u></b></p> <p>Für eine regionale Versorgung und die Transformation des Standorts Bern in eine lebendige Food Hauptstadt sind innovative Wertschöpfungskreisläufe, zum Beispiel für die Gastronomie oder Hotellerie, denkbar. Die Masterarbeit zum Thema „Bern – Die lebendige Food Hauptstadt?“ soll mithilfe einer qualitativen Untersuchung potenzielle regionale Wertschöpfungskreisläufe ausloten. Dabei stellt sich zudem die Frage, was eine lebendige Food Hauptstadt auszeichnet? Die Masterarbeit erfolgt in Zusammenarbeit mit Slow Food Bern und Embrace. Die Ergebnisse dieser sehr aktuellen Fragestellungen können auf politischer Ebene eine Wirkung erzielen, indem innovative, regionale Wertschöpfungskreisläufe gefördert werden.</p> <p>In collaboration with Dr. Raphael Pfarrer (Slow Food Bern); Caspar Lundsgaard-Hansen (embrace, Stadtplanungsamt Bern)</p>	<p>Evelyn Markoni (evelyn.markoni@bfh.ch) Franziska Götze (franziska.goetze.bfh.ch)</p>
<p><b><u>FoodPreneursBern: Äss-Bar, Palette Bern oder Gmüesgarte machen es vor!</u></b></p> <p>Sie sind innovative «FoodPreneurs» in Bern, die eine regionale, nachhaltige Ernährung ermöglichen. So vermeiden sie beispielsweise Food Waste oder unnötige Verpackungen. Aber welche Motivationen stecken dahinter? Stossen diese «FoodPreneurs» auf Hindernisse und wie gehen sie mit diesen um? Die Masterarbeit dient dazu, FoodPreneurs in Bern sowie regionale Wertschöpfungsketten besser verstehen zu können. Zudem sollen politische Empfehlungen abgeleitet werden, um Pionierarbeit in Bern fördern zu können</p>	<p>Evelyn Markoni (evelyn.markoni@bfh.ch)</p>

<p><b><u>TransChain – Was Landwirte und Landwirtinnen in der Schweiz von einer transparenten Lebensmittelwertschöpfungskette erwarten.</u></b></p> <p>Die Masterarbeit soll mithilfe qualitativer und/oder quantitativer Interviews die Erwartungen und das Verständnis von Transparenz bei Landwirten und Landwirtinnen in der Schweiz erforschen. Wo sehen sie Chancen und Risiken einer transparenten Kette? Dieses hochaktuelle Thema ist vor allem durch gesellschaftliche und politische Veränderungen aufgrund der Digitalisierung geprägt. Forschung ist dringend notwendig, um diese aktuellen Veränderungen besser verstehen und deuten zu können.</p>	<p>Evelyn Markoni (evelyn.markoni@bfh.ch)</p>
<p><b><u>Ernährungsgewohnheiten und -verhalten im Militär</u></b></p> <p>Über die Ernährungsgewohnheiten und das Ernährungsverhalten von Personen, die im Schweizer Militär dienen, ist bisher wenig bekannt. Wie auch in der Gesamtbevölkerung ist davon auszugehen, dass hier viele unterschiedliche Bedürfnisse zusammentreffen. In Ihrer Masterarbeit wählen Sie aus einer der folgenden Fragestellungen (möglich sind auch eigene Vorschläge):</p> <ul style="list-style-type: none"> <li>- Welche Erwartungen bzgl. der Verpflegung im Militär haben Rekrutinnen und Rekruten?</li> <li>- Wie beeinflusst das private Essverhalten den Lebensmittelkonsum in der Armee?</li> <li>- Wie bewerten Frauen die Verpflegung in der Armee? Welche Bedürfnisse und Erwartungen haben sie in Bezug auf die Verpflegung im Militär?</li> <li>- Wieviel und welche zusätzliche Verpflegung wird neben dem Angebot der Armee konsumiert (die Auswertung von Ernährungstagebüchern ist möglich)?</li> <li>- Warum wird während des Dienstes vermehrt zu Snack-Produkten gegriffen? (siehe Bachelorarbeit von N. Maurer)</li> <li>- Welche Haltung haben Armeeköche zu ihrer Arbeit im Vergleich zu ihrer beruflichen Tätigkeit?</li> </ul> <p>Die Details zu den einzelnen Themen, z.B. methodisches Vorgehen und Forschungsfragen, entwickeln und diskutieren Sie zusammen mit den Betreuungspersonen der Militärakademie MILAK, der BFH-Gesundheit und der HAFL, die Ihre Arbeit gemeinsam betreuen.</p> <p>Literatur:</p> <p>Keller, U. (1990). Serumcholesterin von Schweizer Wehrmännern und Erhebung über die Ernährung im Militärdienst. Schweizerische Rundschau für Medizin 79(38):1079-1084.</p> <p>Maurer, N. (2018). Ernährung im Schweizer Militär: Zufriedenheit und Bedürfnisse. Bachelorarbeit (HAFL) 120 S.</p> <p>Wyant, K.W. and Meiselman, H.L. (1984). Sex and race differences in food preferences of military personnel. Journal of the American Dietetic Association 84(2):169-175.</p> <p><a href="http://europepmc.org/abstract/med/6693687">http://europepmc.org/abstract/med/6693687</a></p>	<p>Franziska Götze (franziska.goetze.bfh.ch)</p>
<p><b><u>Qualitative determinants of organic consumption</u></b></p> <p>The organic food market has grown successfully over the past decades. Whereas the influence of product prices and income has already been investigated, it has turned out that these can only explain organic consumption to a limited extent. Overall the organic consumption decision seems rather complex. Accordingly, there is a lack of knowledge about other factors influencing organic consumption.</p> <p>This master thesis will shed light especially on the qualitative determinants of organic consumption with a focus on all linguistic</p>	<p>Franziska Götze (franziska.goetze.bfh.ch)</p>

<p>regions of Switzerland. For example, what role does the desire for a healthy diet play, what is the role of animal welfare in the purchase of organic food and is there a connection between sustainability and organic consumption? Methodologically, interviews can be carried out. Depending on the exact research question of this thesis, a written survey can also be conducted.</p> <p>Literature: Lockie, S., Lyons, K., Lawrence, G. &amp; Mummery, K. (2002): Eating 'Green': Motivations Behind Organic Food Consumption in Australia. <i>Sociologia Ruralis</i> 42(1):23-40. Makatouni, A. (2002): What motivates consumers to buy organic food in the UK?: Results from a qualitative study. <i>British Food Journal</i> 104(3/4/5):345-352.</p> <p>Remark: The master thesis is written in the form of a scientific paper. The aim is to publish the paper in a scientific journal.</p>	
<p><b><u>Fermentation concepts for natural vitamin enrichments of plant-based foods and drinks</u></b></p> <p>Plant-based foods are on the rise and are experiencing a growing consumer acceptance and demand. Fermentation is perceived as a natural processing method to transform valuable raw materials into high-quality food products with health attributes. Therefore, the HAFL food processing group puts a specific focus on evaluating fermentation concepts to upgrade plant-based raw materials to foods with clear consumer benefits. A current research project aims at the targeted use of mixtures of heterofermentative lactic acid bacteria for the production of Sauerkraut that is mild in its sourness and high in natural vitamin B12. Similar concepts for naturally fermented non-alcoholic beverages like Kefir and Kombucha are also being investigated. The project would be carried out at HAFL under collaboration with Agroscope and implementation partners from the food industry. Several projects and scopes are conceivable. Experiences in laboratory work are required. Experiences with microbiological and molecular biological lab work are assets.</p>	<p>Carlotta Sartori and Daniel Heine (carlotta.sartori@bfh.ch, daniel.heine@bfh.ch)</p>
<p><b><u>How can sensory education programs involving parents be adapted to the german speaking part of Switzerland?</u></b></p> <p>Litterature research on Sensory Education Program (without parents for example in the school or in outside of school activities) Select a suitable Sensory Food Education program (e.g. from Wallis, France or other European countries) and adapt it to include parent's involvement as well as Swiss-German culture. Concept development and exploration of the possible ways of implementing the concept. - Concrete proposals, including the existing infrastructure (organisations, politics, etc.) (Bern area)</p>	<p>Charlotte Bourcet (charlotte.bourcet@bfh.ch)</p> <p>Eugenia Harms (eugenia.harms@bfh.ch)</p>

<p><b><u>How is the actual state concerning meal palatability in kids collective catering? (focus Bern)</u></b></p> <p>Evaluate food acceptance in the kids collective catering (focus Bern Tagesschule) - Development of a simple methodology to assess meal palatability</p> <p>Interviews (10x) with kids to find the reasons for not liking the meal</p> <p>Objective analysis the meal served and their sensory properties (appearance, flavor intensity, texture, meal structure) (2-3 experts)</p> <p>Observe eating conditions (room set-up, noise level etc.)</p> <p>Measure left over and food waste (categorization of food waste by type of food), focus vegetables</p> <p>Litterature review on existing strategy to favor food intake (focus on vegetable) in kids collective catering services</p> <p>Draw recommendation and guideline to increase meal enjoyment in kids' canteens</p>	<p>Charlotte Bourcet (charlotte.bourcet@bfh.ch)</p> <p>Eugenia Harms (eugenia.harms@bfh.ch)</p>
<p><b><u>Développement de concepts et de produits - un fromage en portion individuelle adapté aux tendances actuelles de consommation (#zeroplastic #minimallyprocessed #localfood)</u></b></p> <p>Une étude récente sur la consommation de fromage chez les enfants et les jeunes adultes a révélé que la consommation de fromage en déplacement (par exemple pendant le goûter à la récréation) est limitée. Certains fromages comme le Babybel, le Kiri, la Mozzarella proposent un format "kids friendly" pour une consommation à usage unique en déplacement. Toutefois, compte tenu de la tendance croissante des aliments peu transformés et des aliments locaux, les parents veulent limiter l'utilisation de ces produits industriels pour leurs enfants.</p> <p>L'objectif de ce BA est de:</p> <p>Explorer les emballages à usage unique existants avec des emballages plus durables en mettant l'accent sur les produits de type fromage.</p> <p>Évaluer la faisabilité technique et les exigences de sécurité du nouveau format d'emballage</p> <p>Définir les caractéristiques du produit requises pour s'adapter au format tout en conservant l'essence de la marque.</p> <p>Développer 2-3 prototypes de produits avec lesquels un test consommateur sera réalisé avec des enfants / jeunes adultes</p>	<p>Charlotte Bourcet (charlotte.bourcet@bfh.ch)</p> <p>Patrick Bürgisser (patrick.buergisser@bfh.ch)</p>
<p><b>HES-SO Sion</b></p>	
<p><b><u>Tailoring whey proteins</u></b></p> <p><b><u>Influence of electric fields and temperature on protein functionality</u></b></p> <p>Whey proteins (WPs) have a high nutritional value. In some applications, the thermal instability is an issue and relates to viscosity changes. We focus on tailored WP functionality when used in infant food formulas. Another aim is decreasing the energy consumption at concentrating and fractionating whey. Our industrial partner in a running R&amp;D project is a Swiss company. Additional supervision: PhD student in food technology and technical staff of the pilot plant</p>	<p>Michael Beyrer (michael.beyrer@hevs.ch)</p>
<p><b><u>Cold plasma sterilization of food powders</u></b></p> <p>Cold plasma inactivates living cells and microorganisms. We use home-made cold plasma technologies for the sterilization of food</p>	<p>Michael Beyrer (michael.beyrer@hevs.ch)</p>

<p>powders. The inactivation of microorganisms and modification of biomolecules are focused. In collaboration with a manufacturer of a food and pharma ingredient, we aim to answer questions on the efficiency for a specific field of application, scaling the process, and answering on toxicological issues. Additional supervision: post-doc in plasma physics and technical staff of different analytical laboratories</p>	
<p><b><u>Plant-based food manufactured by an advanced high-moisture extrusion cooking technique</u></b> We developed technologies for the fibrillation of plant proteins and studied flavour – protein – interactions in extrusion. You can intergrade in running R&amp;D projects with a focus on the raw material for meat substitutes (pea, soy, gluten, algae, and hemp proteins), the extrusion process at pilot scale or flavour release as a function of process and / or matrix material. We aim to create appealing texture and increasing consumer acceptance of meat substitutes. Our industrial partners are equipment suppliers, manufacturers of food additives and food-producing companies. Additional supervision of your project: PhD student and technical staff of the pilot plant.</p>	<p>Michael Beyrer (michael.beyrer@hevs.ch)</p>
<p><b><u>Thermal micro-structuring of whey protein assisted by application of electric fields</u></b> The range of properties of micro-structured whey protein particles is broad and can be designed in our pilot plant. Running such processes at reduced temperatures is supposed to have the advantage of reduced fouling effects in heat exchangers. The impact of electric fields on protein structures will be elucidated.</p>	<p>Michael Beyrer (michael.beyrer@hevs.ch)</p>
<p><b><u>Contribution to the study of the effect of probiotic bacteria encapsulation on the intestinal microflora</u></b> The objectives of this master thesis are to: - realize the state of the art on the subject - select one strain of probiotic bacteria based on its specific physiological effect and its drying resistance - study the influence of the drying parameters on the bacteria viability - propose a model simulating the intestinal microflora. (possible interaction with WGS Berne &amp; BFH)</p>	<p>Laurence Nicolay (laurence.nicolay@hevs.ch)</p>
<p><b><u>Food quality improvement by toxin-prevention : Evaluation of a promising approach</u></b> Food wasting in house-holds accounts for half of total food waste. Wasting is often provoked by personal fear of foodborne toxin-production. The potentially toxin-producing microbes present a risk in the raw materials milk, rice, and in spices. Due to emerging new combinations thereof the risk increases in ready-to-eat meals. The problem today is that there are no routine-type methods applied for such food quality assessment. A candidate new method of toxin analysis is aimed to be used here to guarantee this important aspect of food quality. The aim of this master thesis is to select and identify food products at risk (literature search). Their analysis for the foodborne toxin producers is a routine-type test and hence does not need pre-requisites of laboratory work. This routine-test, by definition run by a non-specialist, rather provides an opportunity for the master student to get familiar with basic lab-work. In</p>	<p>Bruno Schnyder, (Bruno.Schnyder@hevs.ch)</p>

<p>conclusion, the results will be validated for publication and for implementation in food quality control in ready-to-eat food.</p>	
<p><b><u>Search for beneficial effects of probiotics food-supplements</u></b>  Dairy Lactic acid bacterial cultures (Lactobacillus) release lactic acid into the food environment. This contributes to the sensorial characteristics of fermented dairy products. The lactic fermentation traditionally prevents microbial contaminations during stockade. Probiotics including Lactobacillus are increasingly also identified as health benefits preventing microbial infections in human. Here we will test such effects in experimental laboratories using routine-type test ( hence this does not need pre-requisites of laboratory work by the student ). As innovation, the mode of health benefit action will be investigated ( further details are available upon request ), serving to select and prepare the optimal probiotics food or food supplement.</p>	<p>Bruno Schnyder,  (Bruno.Schnyder@hevs.ch)</p>
<p><b><u>Study biochemical formation of milky-creamy tasting lactones from plant materials</u></b></p> <p>Plant-based food &amp; drinks have made a prominent emergence in global markets. However, most of the plant proteins exhibit undesirable flavour notes, which relate to e.g. green, beany aroma as well as astringent and bitter taste. It is known that long chain lactones (e.g. <math>\delta</math>-decalactone and <math>\delta</math>-tetradecalactone) are key contributors to creaminess and mouthfeel, and are able to impart a dairy character to a plant based food, and hence attenuate plant derived off-notes.</p> <p>The goal of this Master thesis would be to screen different bacterial strains on their efficiency and specificity to produce long chain lactones (emphasis on <math>\delta</math>-C10 to <math>\delta</math>-C14) from vegetable oils. Instrumental and sensory analysis in a plant based model matrix will be used to build understanding about biochemistry of lactone formation.</p> <p>Type of work: literature search, fermentation trials, sensory analyses, instrumental analyses (GC/O, GC/MS, LC/MS)</p>	<p>Wilfried Andlauer,  (wilfried.andlauer@hevs.ch)</p>
<p><b><u>All kind of topics concerning FNH-5 - Bioactive compounds (identification, characterization, absorption, influence on the gut microbiota, ...)</u></b></p>	<p>Wilfried Andlauer,  (wilfried.andlauer@hevs.ch)</p>

<p><b><u>Interaction of gut microbiota and plant bioactives: Metabolism of plant bioactives by gut microbiota</u></b></p> <p>This master thesis will be performed with an established gut model in Sion. The analytical tools are established and available. Analytics will be completed by external service laboratories. Support by the food chemistry and the microbiology team is guaranteed.</p> <p>The metabolism of plant bioactives (from flaxseed, strawberries, ...) by gut microbiota will be studied in this master thesis. The focus is on compounds like ellagitannins, lignans and other polyphenols. This master thesis will be performed with an established gut model in Sion. The analytical tools are established and available. Analytics will be completed by external service laboratories.</p> <p>Due to availability of models and analytics, this master thesis can only be performed at the HES-SO in Sion.</p>	<p>Wilfried Andlauer, (wilfried.andlauer@hevs.ch)</p>
<p><b><u>Interaction of gut microbiota and plant bioactives: Effect of plant bioactives and fibers on the gut microbiota</u></b></p> <p>This master thesis will be performed with an established gut model in Sion. The analytical tools are established and available. Analytics will be completed by external service laboratories. Support by the food chemistry and the microbiology team is guaranteed.</p> <p>Studies show that the gut microbiota can influence the incidence for several non-communicable diseases like cancer, obesity or cardiovascular diseases. Having the good composition of gut microorganisms is an important health factor. The microbiota assembly can be influenced by our nutrition. The effects of plant bioactives (polyphenols) and fibers will be studied in this master thesis.</p> <p>Due to availability of models and analytics, this master thesis can only be performed at the HES-SO in Sion.</p>	<p>Wilfried Andlauer, Wolfram Brück (wilfried.andlauer@hevs.ch; wolfram.bruck@hevs.ch)</p>
<p><b><u>Accessibility of bioactive compounds from processed food</u></b></p> <p>Bioactive compounds like polyphenols are often cell wall bound (mainly to non-soluble fibers). Accessibility of bioactives depends on the structure and the size distribution of the fibers. Both, structure and size can be changed by technological transformation, like milling or extrusion. In this master thesis, the accessibility of selected bioactives from linseed before and after technological transformation will be assessed.</p> <p>Technological processes and analytical tools are established and available. Support by the food chemistry and the food technology team is guaranteed.</p> <p>Due to availability of models and analytics, this master thesis can only be performed at the HES-SO in Sion.</p>	<p>Wilfried Andlauer, (wilfried.andlauer@hevs.ch)</p>
<p><b><u>Bioactive compounds from berries</u></b> (plant metabolomics by MS)</p> <p>Work in collaboration with Agroscope Conthey</p> <p>The aim of this master thesis is to analyze berries for their content in bioactive compounds (like ellagitannins).</p> <p>Berries from different varieties will be screened for the health promoting compounds.</p>	<p>Wilfried Andlauer, (wilfried.andlauer@hevs.ch)</p>

<p><b><u>Influence of LED light on bioactives from berries</u></b>  <u>(plant metabolomics by MS)</u>  Work in collaboration with Agroscope Conthey  The aim of this master thesis is to verify the influence of light on quality parameters and health promoting compounds from strawberries and raspberries.</p>	<p>Wilfried Andlauer,  (wilfried.andlauer@hevs.ch)</p>
<p><b><u>Humulones of hop populations</u></b>  <u>(plant metabolomics by MS)</u>  Work in collaboration with Agroscope Conthey  The aim of this master thesis is to analyse different wild and cultivated hop varieties for their humulones (<math>\alpha</math>-acids, known for their bitter taste).</p>	<p>Wilfried Andlauer,  (wilfried.andlauer@hevs.ch)</p>
<p><b><u>Assay development to aid the formulation of health claims for probiotics</u></b>  Objective: The aim of the study will be to develop cell culture-based assays that will make it possible to properly evaluate health claims for probiotic bacteria.  Skills needed: Cell culture, molecular biology, immunological methods.</p>	<p>Wolfram Bruck  (wolfram.bruck@hevs.ch)</p>
<p><b><u>Food quality improvement by toxin-prevention: Evaluation of a promising approach</u></b>  Food wasting in house-holds accounts for half of total food waste. Wasting is often provoked by personal fear of foodborne toxin-production. The potentially toxin-producing microbes present a risk in the raw materials milk, rice, and in spices. Due to emerging new combinations thereof, the risk increases in ready-to-eat meals. The problem today is that there are no routine-type methods applied for such food quality assessment. A candidate new method of toxin analysis is aimed to be used here to guarantee this important aspect of food quality. The aim of this master thesis is to select and identify food products at risk (literature search). Their analysis for the foodborne toxin producers is a routine-type test and hence does not need pre-requisites of laboratory work. This routine-test, by definition run by a non-specialist, rather provides an opportunity for the master student to get familiar with basic lab-work. In conclusion, the results will be validated for publication and for implementation in food quality control in ready-to-eat food.</p>	<p>Bruno Schnyder  (Bruno.Schnyder@hevs.ch)</p>
<p><b><u>Search for beneficial effects of probiotics food-supplements</u></b>  Dairy Lactic acid bacterial cultures (Lactobacillus) release lactic acid into the food environment. This contributes to the sensorial characteristics of fermented dairy products. The lactic fermentation traditionally prevents microbial contaminations during stockade. Probiotics including Lactobacillus are increasingly also identified as health benefits preventing microbial infections in human. Here we will test such effects in experimental laboratories using routine-type test (hence this does not need pre-requisites of laboratory work by the student). As innovation, the mode of health benefit</p>	<p>Bruno Schnyder  (Bruno.Schnyder@hevs.ch)</p>

<p>action will be investigated (further details are available upon request), serving to select and prepare the optimal probiotics food or food supplement.</p>	
<p><b><u>Improving sea-water drinking quality</u></b>  Along with the current climate change the drinking water quality of sea bares more and more consumer's health risks. The quality burden has recently been shown to be due to algae growth in the lakes of Zürich and Lugano. In the here proposed laboratory and environmental work the reasons of the algal growth will be tested (this does not need pre-requisites of laboratory work by the student). The reasons include temperature increases in combination with waste products released into the lakes. As further innovation, experimental approaches will elaborate how to re-gain the natural balance again in the drinking water.</p>	<p>Bruno Schnyder  (Bruno.Schnyder@hevs.ch)</p>
<p><b>Nutrition and Dietetics Berne</b></p>	
<p><b><u>Formula for infants with Cystic Fibrosis</u></b>  Some infants with Cystic Fibrosis have specific nutritional requirements (Turck et al., 2016). Until last year an adapted infant formula for this patient group was available in Switzerland and other European countries, but it has been removed from the market. That is why the German Cystic Fibrosis Nutrition Working Group including members from Germany, Austria and Switzerland have founded a task force to develop a subsequent product based on the newest evidence. First steps have already been undertaken to optimize the composition and the task force has been extended to specialists from UK and Australia. Moreover, at least one company is interested in bringing this product on the market. However, it would be beneficial to further investigate the evidence base and legal requirements of such a product as well as to survey its potential on the European market. This could be the aim of a master thesis. Details and methods need to be further discussed.</p> <p>Turck, D., Braegger, C. P., Colombo, C., Declercq, D., Morton, A., Pancheva, R., . . . Wilschanski, M. (2016). Espen-ESPGHAN-ECFS guidelines on nutrition care for infants, children, and adults with cystic fibrosis. <i>Clinical Nutrition</i>, 35(3), 557-577.  <a href="https://doi.org/10.1016/j.clnu.2016.03.004">https://doi.org/10.1016/j.clnu.2016.03.004</a></p>	<p>Julia Eisenblätter  (julia.eisenblaetter@bfh.ch)</p>
<p><b><u>Dietary habits of Eritrean refugees in Switzerland</u></b>  Migration from developing to developed countries is associated with changes in dietary habits, a process called dietary acculturation (Satia-Abouta, Patterson, Neuhausser, &amp; Elder, 2002). These dietary shifts together with lower physical activity make ethnic minorities especially vulnerable to non-communicable diseases (NCDs). Many of these groups show an elevated risk for being overweight or obese (Wändell, 2013). In the last decade, Switzerland has witnessed an increase of refugees from the horn of Africa, most of them from Eritrea (BFS, 2019). Many of them have a low socio-economic status, working in poorly paid jobs or living on welfare (Eyer &amp; Schweizer, 2010). Despite their higher vulnerability, almost nothing is known about their dietary behavior and their PA in their host countries, despite a myriad of religious food laws according to the Ethiopian orthodox</p>	<p>Franziska Pfister  (franziska.pfister@bfh.ch)</p>

<p>church, with many days of fasting. Even in the literature, research on Eritreans is hardly found.</p> <p>You will contribute to elucidate this topic with your Master thesis, based on a mixed approach.</p>	
<p><b><u>Access of undocumented migrants to food, information on nutrition and health</u></b></p> <p>Regarding health, undocumented migrants are an especially vulnerable group. On the one hand, multiple barriers to health care have been identified. These include barriers experienced in the policy arena, in the health care system, and at the individual level (Hacker, Anies, Folb &amp; Zallman, 2015). Preventive care is rarely sought, as undocumented migrants were shown to have a low knowledge and awareness of NCDs, language barriers, seeking health care only when sick, and have other needs more pressing (Natale-Pereira, Marks, Vega, Mouzon, Hudson, &amp; Salas-Lopez, 2008).</p> <p>Yet, in Switzerland, undocumented migrants present multiple health problems and bear an important burden of chronic diseases (Jackson, Paignon, Wolff &amp; Delicado, 2018), many of them tightly linked to unhealthy dietary habits and lack of physical activity. Food insecurity, which undocumented migrants are prone to, is significantly associated with lower diet quality (Andersson, Hjern &amp; Ascher, 2018; Myhrvold &amp; Småstuen, 2017; Leung, Epel, Ritchie, Crawford, &amp; Laraia, 2014). It is therefore important to know more about food-related practices of undocumented migrants, their awareness of NCDs and their sources of information on nutrition and health in their host country.</p> <p>You will contribute to this understanding with this Master thesis, based on qualitative research or a mixed approach.</p> <p>Condition: Very good Spanish language skills are required.</p>	<p>Franziska Pfister (franziska.pfister@bfh.ch)</p>
<p><b><u>Individual and environmental factors with an influence on the BMI among persons with disabilities</u></b></p> <p>A higher rate of obesity has been reported among persons with disabilities compared with that among persons without disabilities (e.g. Rimmer, Yamaki, Davis, Wang, &amp; Vogel, 2011). Extreme obesity (BMI, &gt; or = 40 kg/m<sup>2</sup>) found to be approximately 4 times higher among people with disabilities than in the general population (Rimmer &amp; Wang, 2005). Nevertheless, they are currently underserved in health promotion programs. For developing strategies and programs to reduce incidences of overweight and obesity for persons with DD, we must understand the factors causing overweight and obesity at an individual level (e.g. eating behaviour) and in the environment (residential home).</p>	<p>Franziska Pfister (franziska.pfister@bfh.ch)</p>

<p>In this Master-Thesis you will substantially contribute to the identification of the key factors with an influence on the BMI of the target group.</p>	
<p><b><u>Determinants on stunting in Zambian rural children</u></b></p> <p>In Zambia, over 90% of the dietary energy is provided by cereals, starchy roots, fats, oils and sugars and diet is low in nutrients (Harris, Chisanga, Drimie, &amp; Kennedy, 2019; Nyirenda &amp; Musukwa, 2007). Children are especially affected by the low dietary diversity: Only 22% of the age group 6-23 months received food from four or more food groups out of seven (roughly 30% in urban areas vs. 18% in rural areas) (Central Statistical Office, Ministry of Health and ICF International, 2014). An adequate meal frequency is achieved by only 42% of children across Zambia, resulting in only 11% of children receiving an adequate minimum feeding. In the lowest wealth quintile this figure is as low as 7% of (Central Statistical Office, Ministry of Health and ICF International, 2014).</p> <p>In this Master-Thesis you will identify the most important determinants on dietary diversity and stunting in a specific region in Zambia with mixed methods. Ideally the Thesis is combined with FNH-7. If possible, it will be embedded in a project (if finances are found).</p>	<p>Franziska Pfister (franziska.pfister@bfh.ch)</p>
<p><b><u>What aspects of quality of life to patients with irritable bowel syndrome (IBS) rate as most important?</u></b></p> <p>A range of instruments to assess quality of life exist, some are more general, others disease specific. As part of a PhD project developing and evaluating a guideline assessing the quality of outcomes in dietary counselling of patients with IBS, the topic of quality of life in these patients should be elaborated. The aim is to better understand what aspects of quality of life IBS patients regard as most relevant and what instruments they judge as most suitable to assess quality of life in dietary counselling. The idea is to conduct focus group interviews with IBS patients to discuss these issues in depth. Optimally, the focus group discussions include German speaking individuals living in Switzerland but for foreign students' other options could be discussed. Furthermore, if students are new to qualitative methods, FNH-7 could be used to learn qualitative methods as a preparation for this project.</p>	<p>Sandra Jent (sandra.jent@bfh.ch)</p>

<p><b><u>Development of a guideline for outcome assessment in dietary counselling of irritable bowel syndrome (IBS)</u></b></p> <p>Background: IBS affects 12-15% of people in Europe, which corresponds to more than one million people in Switzerland. Patients suffer from symptoms such as abdominal pain and cramps, changes in stool habits such as constipation or diarrhea, flatulence and/or meteorism, resulting in a reduced quality of life. So far, only symptomatic treatment approaches for IBS are available, and dietary counselling is one important pillar. Due to rising costs, the healthcare system in general, but also dietary counselling, are faced with the challenge of demonstrating that therapies are effective not only in clinical studies but also in everyday practice. This is often done with subsequent analysis of patient data. However, if such studies are not well planned prior to data collection, problems such as heterogeneous and missing data arise, which sometimes make it impossible to assess effectiveness.</p> <p>Objective: The aim of this project is to develop a German guideline for dietitians to reliably assess quality of outcomes of dietary interventions in IBS</p> <p>Methods: literature based guideline development, involving an expert group to discuss the guideline (focus group discussion)</p> <p>Remarks: German language skills required. The guideline will subsequently be evaluated in a cohort study. Literature on guideline development: Papoutsakis, C., Moloney, L., Sinley, R. C., Acosta, A., Handu, D., &amp; Steiber, A. L. (2017). Academy of Nutrition and Dietetics Methodology for Developing Evidence-Based Nutrition Practice Guidelines. Journal of the Academy of Nutrition and Dietetics, 117(5), 794-804.  <a href="https://doi.org/10.1016/j.jand.2016.07.011">https://doi.org/10.1016/j.jand.2016.07.011</a></p>	<p>Sandra Jent (sandra.jent@bfh.ch)</p>
<p><b><u>Focus group with patients with irritable bowel syndrome (IBS) on relevant outcomes of dietary counselling</u></b></p> <p>Background: We aim to develop guideline for measuring the quality of outcomes in dietary counselling in IBS to allow dietitians to assess the quality and effectiveness of their interventions. The guideline will, however, only be successful in practice if it collects outcomes that are relevant to IBS patients.</p> <p>Objective: to assess what outcomes are most relevant for IBS patients if they see a dietitian.</p> <p>Methods: to be discussed. This topic could be addressed with qualitative (most probably focus groups) or quantitative methods (e.g. survey).</p>	<p>Sandra Jent (sandra.jent@bfh.ch)</p>
<p><b><u>Do free-living vegans meet recommendations for essential amino acid intake?</u></b></p> <p>Several studies on nutrient intake of vegans showed that participants were in general be able to meet recommendations for total protein intake on a 0.8 g/kg body weight (BW) level. However, most of the studies recruited volunteers, who might not be representative for vegans in the general population. It is therefore questionable, whether the latter are also sufficiently supplied with protein. In addition, the 0.8g value is in discussion. Actual research recommends rather 1.0-1.2 g/kg BW protein.</p> <p>Besides this it remains unclear whether vegans meet recommendations for essential amino acids (EAA) on either total protein level. This is of particular importance, since vegans in contrast to omnivores or lacto-ovo-vegetarians have a limited choice of protein sources (mainly grains, legumes, soy products,</p>	<p>Steffen Theobald (steffen.theobald@bfh.ch)</p>

<p>and nuts). Moreover a high intake of low-processed legumes (beans, lentils, chickpeas) could cause gastrointestinal complaints, which by avoiding them might lead into a reduced total protein intake.</p> <p>Therefore the focus of this master thesis is on:</p> <ul style="list-style-type: none"> <li>• -identifying studies which determined intake of EAA intake of vegan populations</li> <li>• checking and comparing worldwide recommendations for EAA</li> <li>• identifying worldwide databases which list EAA contents of foods</li> <li>• calculate suitable dietary plans that meet recommendations for total protein, EAA as well as all other essential nutrients</li> </ul>	
<p><b><u>Truthfulness in nutritional Recommendations /Dietitians / Nutritionists</u></b></p> <p>Media often publishes controversial nutritional messages. This often happens not least because of the low evidence of available studies, because of different interest groups, or simply because of false knowledge. The population cannot properly assess the truthfulness of this information. And this might have consequences on the credibility of the professional group Dietitians/Nutritionists. This leads to the following research questions</p> <p>Do people trust in Official Nutritional Recommendation? Do people trust in Nutritionists / Dietitians? How are people dealing with new nutritional Information? Which strategies are needed to deal with this in the future?</p> <p>Literature:Rebekah H. Nagler. Adverse Outcomes Associated With Media Exposure to Contradictory Nutrition Messages. Journal of Health Communication, 2014; 19 (1): 24 DOI: 10.1080/10810730.2013.798384</p>	<p>Karin Haas (karin.haas@bfh.ch)</p>
<p><b><u>Development of a tool measuring nutrition knowledge in Swiss German-speaking adolescents</u></b></p> <p>Within the framework of the Swiss Food Strategy 2017-24, various fields of action were defined. One field of action comprises information and education to strengthen self-responsibility. To be able to measure outcomes like nutrition education (or literacy or knowledge) during intervention for specific population groups, validated instruments are needed. Which measuring instruments for adolescents are described in the literature? Which would be appropriate for this population group?</p> <p>Literature: Newton G, Racey M, Marquez O, McKenney A, Preyde M, Wosnick D. A Systematic Review of Tools Measuring Nutrition Knowledge of Pre-Adolescents and Adolescents in a School-Based Setting. J Sch Health. 2019 May;89(5):402-416. doi: 10.1111/josh.12752. Epub 2019 Mar 20. PubMed PMID: 30895628.</p>	<p>Karin Haas (karin.haas@bfh.ch)</p>
<p><b><u>Needs assessment including barriers and facilitators to ameliorate eating behaviors of Serbians living in Switzerland</u></b></p> <p>Today, there are approximately 61'588 Serbians living in Switzerland (SEM 2019). There is limited information about their eating patterns. Data from a previous health monitoring study among selected groups of migrants in Switzerland show that Serbs consume 16% less of the recommended daily intake of fruits and vegetables compared to their Swiss counterparts (Guggisberg et al. 2011).</p>	<p>Leila Sadeghi-Reeves (leila.sadeghi@bfh.ch )</p>

The lack of recent data pertaining to eating behaviors in this population paves the way for an evaluation of the current situation. A needs assessment will initially be conducted to identify what this population subgroup in Switzerland needs to ameliorate their eating behaviors, while considering barriers and facilitators.

Literature: Bartholomew Eldrigde, L. K., Markham, C. M., Ruitter, R. A. C., Fernàndez, M. E., Kok, G., & Parcel, G. S. (2016). Planning health promotion programs: An Intervention Mapping approach (4th ed.). Hoboken, NJ: Wiley.

Zollikofen, 14.09.2020

Partner :

